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CONTENTS

EDITORIAL:

Editorial Notes.....	147
Records of Automatic Block Signal Performance.....	148
Overlapping Protective Committees.....	148
Enlightening (?) the Public.....	149
Inconsistent Federal Regulation.....	150
New Books	150

ILLUSTRATED:

Steam Turbine Electric Locomotive.....	152
Locomotive and Car Shops of the National Trans-Continental.....	154
Burlington Chair Car.....	157
Multiple Track Railways in Ohio.....	162

MISCELLANEOUS:

Deadwood in Railway Service.....	151
Report on Pittsburgh Subway.....	159
Railway Statistics of the United States, Year Ended June 30, 1909..	161
Proposed Standard Form of Railway-Telephone Agreement.....	163
Foreign Railway Notes.....	161, 165

GENERAL NEWS SECTION.....	164
SUPPLY TRADE SECTION.....	176

IT is announced in Washington that the Secretary of State has appointed Hon. Martin A. Knapp, chairman of the Interstate Commerce Commission, to confer with Hon. J. P. Mabey, chairman of the Railway Commission of Canada, on the subject of joint control of international freight and passenger rates. This is the outcome of a suggestion made by the Canadian commission a year ago, based, it is said, on the fact that there has been some demand in Canada for suitable legislation by which a railway can be required, for instance, to make through rates from Montreal to Philadelphia, the same as though both cities were in Canada or both in the United States. It is claimed that there are cases where such through shipments have to pay the sum of two local rates, when equity would require that a lower through rate be made. As the Canadian Railway Commission has a reputation for making wise and just decisions in rate questions, there

can be no objection to the proposed conferences—if Chairman Knapp can spare the necessary time from his numerous engagements as mediator in disputes about wages; but it is not clear that there is any pressing public need for joint control. The necessary machinery would be somewhat cumbersome. The present arrangement, by which international rates are controlled by each country separately, so far as its territorial jurisdiction will allow, seems to work pretty well. Rates are in most cases kept down by competition; and as for publicity (in case of abuses) the regulating bodies of the two countries can co-operate effectively without any change in the laws. When one reads the scores of decisions issued by the Interstate Commerce Commission on such questions as whether sawdust should be charged more or less than planing-mill shavings, the thought of making that kind of question the subject of a treaty between "high contracting parties" is rather wearying.

ONE of the anomalies of the railway accident record, as published quarterly by the Interstate Commerce Commission, is the very considerable number of men killed and injured in coupling and uncoupling cars. In the latest bulletin, that for the last three months of 1909, the total number killed in coupling or uncoupling was 66, and injured 837. And yet the law requiring the universal use of automatic couplers has been in full force for 10 years. The present record is in large degree explainable by the broad definition which is given to the term "coupling." It includes all of the preparatory processes as well as miscellaneous work connected with the handling of cars on which the coupling apparatus is out of order. Much of the work done under this head is, in a sense, unnecessary, in that the rules if strictly followed, authorize the men to postpone operations in which they have to risk their limbs until the work can be done with safety. Indeed, it is said, in the bulletin before us (Table 3), that four of the killed and 30 of the injured went between cars unnecessarily and contrary to rule. These facts of the accident record are brought to mind by a recent newspaper item, which says that on the Middle division of the Pennsylvania Railroad an order has been issued that—

"In the event of an employee finding it necessary to go between cars in a train, before doing so he must safeguard himself by seeing that some member of the crew is made aware of the fact, and the latter must take the necessary precautions to prevent the train being moved while there is a man between the cars."

While this order simply gives form to what already is (or should be) the best practice, it will be useful in calling the attention of trainmen formally to the fact that going between cars is risky and, moreover, that, when it has to do with coupling, the act is contrary to the spirit of the law. The habit of risking life and limb seems in railway work to be most insidious. This being so, every trainman ought to be glad of the adoption of any rule which will help eradicate the habit.

THE wreck which was caused by the collision at Middletown, Ohio, July 4, in which 23 persons were killed, was caught by the motion-picture photographers within an hour after the collision occurred, and it appears that the owners of the films have exhibited, or attempted to exhibit, the pictures in the towns in that region. To this exhibition the railway company objects, and the mayor of Hamilton has been asked to suppress the pictures as being morbid and distressing in character. Such a request is eminently proper. Motion pictures are so inexpensive that the shows draw large numbers of children and youths who are more likely to be harmed than benefited by sights of dead and dying victims of a smash-up. The city authorities should act on their own initiative in such a matter, as much as in the case of the prizefight pictures. Such shows take us back a hundred years, when children were taken to see public executions of criminals. At the same time it must be said that a railway which in this year of grace runs heavy passenger trains on single track at 70 miles an hour without a space interval system deserves all the punishment that may come to it by the exhibition of the

results of such a dangerous method of train management. Indeed, if motion pictures showing the distress caused by collisions could be displayed before some men who are responsible for the creation of public opinion, an appropriation from the public treasury for that purpose would be commendable.

RECORDS OF AUTOMATIC BLOCK SIGNAL PERFORMANCE.

WITH the rapid increase in mileage worked under automatic block signals, railways have come face to face with the serious question of being able to get from their employees reliable reports of false clear signal failures. Such failures are of themselves very difficult to detect in the ordinary course of events unless they happen to hold the signal continuously in the clear position. Occasional or intermittent clear failures are discovered, usually, only by accident. Of course, a man riding on the rear end of a train will, in daylight, be able to detect any such failure for his train; but to employ a sufficient number of inspectors to ride on the rear end of every train would be an unwarranted expense. It would not be impossible, perhaps, to require flagmen or rear brakemen to observe signals from the rear end and report false clear failures, but no one has yet tried this with sufficient care to show whether it could be done without annoying difficulties. To identify the signals accurately would be a somewhat strenuous job. It is almost out of the question to detect clear failures on a track on which the train is not running, as it is seldom possible to see whether or not the whole block is occupied. On a dark night there is nothing to show a man on the rear end whether or not a signal (on his own track) sticks clear except in some cases a back light; and back lights are so small or dim that they are easily confused with other lights. To make of them reliable indications would necessitate radical changes. In times of storm, even during the day, the difficulty is greatly increased.

It seems, then, that, unless we are going into costly experiments and radical changes, reliance must be placed for accurate reports on efficient inspection and the honesty of the signal repairmen. The section forces might be educated to a point where they could make reliable reports on signal failures and thus assist materially. This, however, would take time, and the present assumption presupposes a high order of discipline and a thorough understanding among the men of the true purpose of reports of clear as well as other failures, which purpose is a check on the efficiency of the organization and apparatus and not a system of espionage. Especially should it be understood that the maintainer will not be censured for failures not due to any fault of his. Many men will instinctively try to conceal failures for the sake of their records, or for fear of censure or through a mistaken sense of loyalty to some fellow-employee. For this reason failures should be classified, and those due to poor maintenance only should count against the maintainer's record.

Reasonably frequent staff meetings, at which the subject of reporting and the causes of failures can be freely discussed, are an efficient means of gaining the confidence of the men. The signal engineer or other responsible officer should hold meetings regularly with the supervisors, and they in turn with their men. All the maintainers could not, of course, be withdrawn from their sections at one time for this purpose, but they could be divided into groups, each of which could meet separately; and these groups could be made to overlap so that the personal experiences of each man would be available to all. Brief reports of such meetings could be distributed throughout the department, the names of those participating being omitted if found desirable. At such meetings the dangerous nature of false clear failures and the desirability of removing their causes at almost any cost should be impressed on all. In this connection, it is possible, with a little intelligence, to do much good work of an educational nature among the maintainers through the inspectors and supervisors.

This matter of reliable reports is one of the most serious problems connected with automatic block signal operation. Last

year the Railway Signal association appointed a committee to investigate the subject and report on methods in use and to make recommendations. This committee is competent to deal with the subject with thoroughness and intelligence, and its report should be of great value to all concerned.

OVERLAPPING PROTECTIVE COMMITTEES.

IT is not unusual during railway receiverships to have two rival committees, both representing the same class of securities and each asking for the deposit of these securities and issuing in exchange certificates of deposit, but it is quite unusual for a protective committee to be formed which asks not only for the deposit of securities but for the deposit of certificates of deposit representing securities deposited with another committee. In the case of the Wabash-Pittsburgh Terminal first mortgage bonds, a protective committee, of which J. N. Wallace, president of the Central Trust Co. of New York, is chairman, was formed soon after the receivership and received deposits of first mortgage bonds, issuing in exchange certificates of deposit. It is claimed that the agreement under which these first mortgage bonds were deposited provides that bondowners shall not have the right to withdraw their securities until the committee has formulated a plan for the reorganization of the company. A tentative plan for the reorganization of the Wheeling & Lake Erie and the Wabash-Pittsburgh Terminal was suggested, but had to be abandoned because of legal difficulties. The first mortgage bonds of the Terminal company are secured on the property of that company and by the deposit of a controlling interest of the stock of the Wheeling & Lake Erie and also by a traffic agreement made between the Terminal company, the Wabash Railroad and the Wheeling & Lake Erie, under which the Wabash and the Wheeling agreed to pay the Terminal company 25 per cent. of the gross profits on interchange traffic in case this amount is needed to meet a deficit in interest of the Terminal company. When the Wheeling was put in the hands of a receiver, this traffic agreement was suspended by the receiver under order of the court, and shortly afterward the Wabash also suspended its agreement with the Terminal company.

On August 1, 1908, \$8,000,000 5 per cent. notes of the Wheeling fell due. These notes were secured by a deposit of \$12,000,000 general mortgage 4 per cent. bonds of the Wheeling and were guaranteed, principal and interest, by the Wabash Railroad. The notes were bought by a syndicate representing Wabash interests, and this syndicate presumably now holds the \$12,000,000 Wheeling 4's that were the security for the notes. It is claimed that the trustee of these Wheeling 4's is the Central Trust Co. of New York, and the interests which have now formed a new protective committee to represent Wabash-Pittsburgh Terminal first mortgage bonds have pointed out that the same interests, namely, the Central Trust Co. interests, have been placed in the contradictory position of representing the Terminal company's bonds, one of the equities of which bonds lies in the traffic agreement between the Wheeling, the Wabash and the Terminal company, and at the same time representing the general mortgage bonds of the Wheeling, which bonds would be directly benefited by a final suspension of the tri-party traffic agreement. The new protective committee, of which James G. Chaplin is chairman, will ask the deposit of both Terminal first mortgage bonds and certificates of deposit of the Wallace committee of these bonds. Apparently, the Chaplin committee thinks that the interests of Terminal mortgage bondowners will not be served by a suit brought against the Wallace committee to compel them to return bonds deposited with them, because, it is said, such a suit, if successful, would relieve the Wallace committee of any responsibility that it may already have incurred through delay in forming a plan for the reorganization of the Terminal company. On the other hand, the Chaplin committee must have in some substantial form the assurance of at least a considerable part of the Terminal company bondowners before it can take any definite steps toward the protection of these

bondowners. Apparently, therefore, its object will be to formulate plans for a reorganization of the Terminal property and for the protection of the bondowners in the hope that by showing what can be done in the bondowners' interests it will by inference show what could have been done by the Wallace committee. In this way it would seem that the Chaplin committee hopes to be able to force the Wallace committee either to adopt the Chaplin plan or to make a plan of its own which will give the bondowners the chance to withdraw their bonds from the Wallace committee. It is a curious illustration of the intricacies of system building that the interests representing the Wabash Railroad and the Wheeling & Lake Erie appear to be almost as convinced now that they must free themselves of any connection and responsibility for the Wabash-Pittsburgh Terminal as the Gould interests were originally anxious to gain an entrance into Pittsburgh. In the meantime the quotation for Terminal first mortgage 4's was as low as $35\frac{1}{4}$ last week, and the quotation for Central Trust company certificates representing these 4's was 32. The second mortgage bonds of the Terminal company were quoted last week as low as $4\frac{1}{4}$.

ENLIGHTENING (?) THE PUBLIC.

THE hearing which was given by the Interstate Commerce Commission at Washington last week on the application of the New Jersey commuters for an order postponing the advertised increase in the prices of their tickets afforded a fine example of a waste of energy which is often observable in the presentation of railway affairs to the public. Following the prayer-book as though it were the very gospel, the railways left undone the things that they ought to have done and did the things that they ought not to have done. Their main purpose seemed to be to take still another line from the prayer-book and, in the most impressive manner possible, declare that, as a result of the hardships endured during the past few years, "There is no health in us." But, with a fatuity that is inexplicable, they proved too much; proved not only that they lacked health but that they were dead and buried—almost.

The statistics which were presented were either fragmentary or one-sided; so much so that they could have little, if any, useful effect, while the thing that obviously was most needed, a succinct statement clearly showing the strength of the railways' case, was conspicuous by its absence. The reporters, ready to publish such a statement, were left to put it together as best they could. Each railway officer who attended the hearing had for his main object, no doubt, the presentation to the commission of conclusive evidence that the commutation rates which he had advertised were reasonable; and we must conclude that he carried out his purpose; carried it out by laying before the commission statistics of which the reporters did not get hold. But there was also another object: the laying of his case before the public. It is the failure to do this effectively, or even in a passable fashion, of which we are here complaining. If the railway man says that he did not expect or intend to enlighten the public on this subject at this particular time, we reply that that is a duty which he could not fairly omit; for the newspapers, looking upon this hearing, the first under the revised law, as of unusual importance, were sure to do their best to publish an illuminating report of it. Doing their very best, however, they could not make a satisfactory report, and therefore it was the duty of the railways to have prepared one. If those people who are interested in a subject of this kind could be induced to repress their curiosity until the Interstate Commerce Commission should find time to issue a report, the case might be different; but that is not possible. The people want a report at once, and the Associated Press tries to give it to them. A number of railway press bureaus are now engaged constantly in an endeavor to enlighten the public as to the useful activities, the virtues and misfortunes of the railways. Here was an opportunity which they missed.

There is no evading the demand for all reasonable fulness and frankness in giving information to the public. Partial or mis-

leading information either falls flat and is unnoticed, or it leads somebody to still further befog the issue by publishing misleading information on the other side. Any deliverance which manifests a lack of frankness leads shippers, and all of the voluble fellows who pose as advocates of the shippers, to issue something from their standpoint which is equally futile, and that portion of the public which is disposed to be impartial is delayed and confused in reaching any satisfactory conclusion. The Chicago spokesmen of the shippers' organizations even complain that the Railway Business Association is made up largely of railway men in disguise; and when a beef shipper agrees to an advance in freight rates he is accused of being an owner of railway stock rather than a shipper of beef. And when it comes to making exaggerated and one-sided statements, we think that the "shippers" are less blameworthy than the railway men, for, in their bigger mountain of ignorance, they have a more plausible excuse for their errors.

President Truesdale of the Lackawanna said at Washington that in 10 years his company had lost about a million dollars a year on the operation of the Morris & Essex, which is leased to the Lackawanna, or ten millions during the whole period of 10 years; while, during the same time, the Lackawanna had spent on the M. & E. fifteen millions. The uninformed reader gives no credence to such a statement as that. He feels sure that there is something wrong about it. The reader who has some little information about the relations of these two companies to each other concludes that somewhere in the accounts a big profit would be shown, and that this big profit has been concealed. The fact that this loss of a million a year is calculated after interest at 7 per cent. has been paid on nearly thirty-two millions of the stock and bonds of the Morris & Essex is soon discovered by any one who finds it worth while to look up the record. This interest, amounting to \$2,217,390 a year, is \$950,290 larger than the sum that would have to be paid if the interest rate were 4 per cent. instead of 7 per cent.; and this difference is just about equal to the annual deficit as given by Mr. Truesdale. As a large majority of newspaper readers and other citizens believe that 4 per cent. is a reasonable rate of interest on railway investments, this is a state of facts which ought to be explained. If it is not explained by the railway officers most interested, it will be explained, with suitable coloring, by someone else.

The public, in considering the cost of operating a railway, looks, and rightfully looks, on the total payments of interest on all of the capital invested. If a road is doing business at a loss, even for a short time, it has some reason for doing so, and in a case like this the public is entitled to know the reason. No honorable merchant offers to sell goods at less than cost without setting forth what he believes will be accepted by the public as a reasonable explanation of his attitude.

Some of the other roads presented figures at the hearing as confusing as those here referred to, though not on such a large scale. Statements of profit or loss per passenger mile, per train mile, per passenger journey or per passenger year (or month) are mostly wasted at a public hearing, because the hearers are led to try to swallow more than they can assimilate; while the reader of the doings in the newspapers the next morning suffers from the hasty preparation of the report by the newspapers. As before observed, the thing needed is a full and sufficient statement by the railways. A general argument, based on the increase in the cost of living, such as would be put into a stump speech, does not meet the situation. The only satisfactory treatment is by means of a statistical comparison. It may be said that so ponderous a production is not called for; but to this the obvious answers are: (1) The railways began by giving out a lot of figures voluntarily and (2) the Associated Press tried to give these railway statements to the public. Once begun, the process should be carried out.

Again, any statement of a case like this should be of reasonable length. If the attorneys who go to Washington furnish material for a four-column article, and the matter seems to the editorial agent of the Associated Press too thin to be worth more

than one column, he is going to try to abridge or condense what is given to him. He is likely to do that job imperfectly, and therefore it behooves the railways not only to prepare an article beforehand but to make it of reasonable length and solidity.

Omission of important features, concerning which newspaper readers are well enough informed to raise mental queries as they read, is also a serious mistake. There is no longer any use in getting up railway "news" in the style of the idle-hour paragraphs of the afternoon papers. The business in hand is an element in a serious controversy, and if it is not to be taken up with a view to real illumination of its obscure features it is a question whether it should be taken up at all. But, as already intimated, the Associated Press will take it up even if those most interested neglect it.

INCONSISTENT FEDERAL REGULATION.

THE inconsistency between the Sherman act and the Interstate Commerce Act would have been much reduced if the administration railway bill introduced at the last session of Congress had been passed as originally presented. It would have legalized reasonable agreements regarding rates and also some existing combinations of parallel railways. Instead of being mitigated, this inconsistency has been increased by the enactment of the Mann-Elkins act; and it is now more glaring than ever before. This emphasizes the need for amendment of the Sherman act as it applies to railways.

When the original Interstate Commerce Act was passed, the Interstate Commerce Commission assumed that it was empowered to reduce rates, and acted accordingly. When the Sherman law was passed, it was the general understanding that it did not apply to railways. So long as this condition lasted there was no seeming inconsistency between the two laws. The railways, it was understood, had the right to make reasonable agreements regarding rates; and the commission, it was assumed, had power, by reducing any unreasonable rates that they might make, to prevent them from abusing this right. The Supreme Court of the United States, by its decisions in the maximum freight rate cases and in the Trans-Missouri Freight Association case, completely reversed the situation. In the latter case it held that the railways could make no agreements in restraint of trade, reasonable or unreasonable. In the former cases it held that the commission had no power to fix rates. This interpretation of the two acts developed the inconsistency between them. The Interstate Commerce Act prohibited unfair discrimination. In order to avoid unfair discrimination it was necessary for the railways to make and carry out agreements for that purpose. But the Sherman act, as it was interpreted, prohibited the necessary agreements and concerted action.

The inconsistency was increased by the passage of the Hepburn act. It rendered the prohibition of the Sherman act against agreements regarding competitive rates entirely superfluous, as it gave the commission power to reduce an unreasonable rate whether fixed by an individual road or by a combination of roads. The Mann-Elkins act goes much farther. It gives the commission also authority to prevent any road or number of roads from making any change in rates that may be discriminatory or unreasonable. Since the commission can now render innocuous and futile any and every rate agreement between competing railways, what rational ground can there be for retaining the prohibition of the Sherman law not only against unreasonable, but also against reasonable, agreements?

The two laws are not only inconsistent in principle, but directly contradict each other. The theory of the Sherman act as interpreted by the Supreme Court is that each carrier must take individual action regarding all its rates. The Interstate Commerce Act, on the other hand, plainly contemplates concerted action, and the commission in passing on rates which are complained of and in fixing new rates does not deal with the rates of each carrier individually, but with the rates of groups of carriers. When all the railways between Chicago and New York agree to fix the same rates, they violate the Sherman law. When the commission itself fixes the same rates for all these carriers, what happens? If it is wrong for competing

carriers to make the same rates, is it right for the commission to make the same rates for them? And if it is not wrong for competing railways to charge the same rates, but, on the other hand, is right and desirable, can it be wrong for them to agree to make the same rates?

If the railways should try to comply literally with both the Sherman act and the Interstate Commerce Act, the business of the country and the work of the commission would immediately be completely demoralized. For if the roads made their rates by absolutely individual action, they would necessarily make different rates. The shipper, then, in order to be sure that he got the lowest rate between any two points, would have to examine not merely a single tariff issued by a group of roads, but the tariffs of each road by which it was possible for him to ship. The commission, instead of investigating the rates of a group of roads, would have to attempt the interminable task of investigating the rates of each individual road in the group. It would be absolutely impossible for the railways, the shippers or the commission to do business in literal compliance with the Sherman act.

It may be replied that nobody would be a big enough fool to try literally either to enforce or obey the Sherman act. But the injunction suit started by the department of justice at Hamilton, Mo., shows that as it applies to railways it is not dead but merely sleeping. It is a constant menace to present methods of doing business. Nobody can tell when some United States district attorney desiring to get a reputation as a tribune of the people may run amuck and start prosecutions against some group of railways that will compel them, temporarily at least, to abandon present methods of rate-making. President Taft, by causing the starting of the proceeding at Hamilton, Mo., and then promptly stopping it, showed that he recognizes the fact that the Sherman act as it applies to railways is fit to exist only as a threat. Any law which is fit to exist only as a threat is not fit to exist at all. The country ought to choose whether it will repeal it or enforce it. If public sentiment cannot otherwise be educated to the point where it will force Congress to repeal it, it is perhaps to be hoped that the government soon will run amuck and try literally to enforce it. The immediate results will be evil. Some persons, who have been guilty of no offense but that of violating a law which cannot be obeyed without violating other more important laws and demoralizing business, would be punished. But the ultimate result would be to cause the law's repeal as it applies to railways; and that would be worth all that securing it would cost.

NEW BOOKS.

A Congressional History of Railways. Vol. II. The railways in Congress, 1850-1887. By Lewis H. Haney, Ph.D. 335 pages; 5¼ in. x 8½ in. Madison, Wis.: The Democrat Printing Co.

The first volume of this work was noticed in the *Railway Age Gazette* of February 26, 1909, page 395. The author was then a professor in the State University of Iowa, but the title page of Volume II. shows him as now associate professor and acting head of the Department of Economics of the University of Texas. The first volume brought the history down to 1850. The two together constitute a careful compilation of notes concerning every feature of federal regulation of railways down to the enactment of the Interstate Commerce law in 1887. The author has studied his material with great care and in very numerous footnotes gives his authority for every quotation made. The second volume, like Volume I., has a good deal of matter which the historian will find so nearly worthless that he will wish it had been buried; but the useful matter is all there. Some of the principal headings in the present volume are: land grants; import duties on railway iron; the development and passage of the Pacific railway bill; the southern route to the Pacific; Isthmian railway developments; railway affairs in the civil war; the mail service; Congress and the Granger movement, and the Interstate Commerce act. In the preface the author says that he has been aided by the Carnegie institution. The whole work was issued originally in a Bulletin of the University of Wisconsin, Economics and Political Science Series.

DEADWOOD IN RAILWAY SERVICE.

BY N. F. DOUGHERTY,

Yardmaster, Pennsylvania Railroad, Verona, Pa.

Deadwood defined means "useless material." But as applied to employees of railways and commercial concerns it means *useful material* if properly handled and trained. Railways carry more of this material than commercial concerns because of their much larger departments and the impossibility of personal supervision of employees by the higher officers. Commercial organizations have always followed the practice of *worth-selection* and have paid for it. Financially unable to carry "deadwood" their organizations are necessarily compact; and they have selected, retained and rewarded the man who showed that he could "carry the message to Garcia," turning adrift those who fall short of the mark. There is a familiar saying among those in the ranks of a railway "once a railway man, always a railway man." Railway employees feel that it is a matter of mutual promises "for better or for worse, until death do us part," and the railways, through a mistaken idea that a paternal spirit properly imbued in the minds of the men generates loyalty and interested service, have kept their promise faithfully.

This paper will be confined to railway employees below the position of superintendent. The ability of the higher officers being conceded, it is with the idea of bringing the line into conformity with the staff, with the ultimate object of a reduction in operating cost by the practice of *worth-selection* of employees instead of chance selection, that this paper is written.

The term "deadwood" does not apply to the man who has served faithfully throughout his lifetime and become incapacitated, but it applies most emphatically to the men who can, but do not, work interestedly and faithfully, because they reason that they feel the avenues of progress are closed by the restriction of promotion to certain lines and departments.

While this feeling affects the employees in all the departments of railways, my remarks are confined to those in the operating department, because that department must always exercise a great influence on the net earnings; and, again, because it is that department to which the patrons of the railway look for service.

The fundamental operations of a railway are controlled by

Yardmasters,
Train despatchers,
Road conductors,
Yard conductors.

The yardmaster originates and places cars, starts and receives trains; the train despatcher controls their movements between terminals; and the road and yard conductors execute their orders.

Now, what is the status of these men to whom are intrusted the fundamental operations of railway transportation? Yardmasters are selected from a body of employees embracing clerks, operators and conductors, often because either of the recommendation of a friendly superior or length of service, the practice of selection according to worth not always being followed. These men have usually reached middle age before they are appointed yardmasters; they lack a thorough educational basis, want originality, and have passed the age of development. They meet each day's requirements with the minimum effort and with no idea of permanent improvement for themselves or betterment of operating conditions.

Train despatchers are promoted from operators, and yard and road conductors from brakemen, the question of advancement to these positions turning generally on length of service. These men also have reached middle age before they are appointed to these positions; they have only had training in one line, and, having little or no hope of further advancement, they soon lose interest in their work. They have had only one kind of experience, and it naturally follows that they have but one set of ideas and associates; and as these allow no opportunity for broadening or developing, in a few years their interest wanes,

and the result is deadwood in place of what was perhaps promising material.

The present plan of promotion becomes most serious as applied to the next higher positions, the highest positions in the subordinate ranks, viz., those of trainmaster, division operator and chief clerk. With few exceptions the training of the men appointed to these positions has been similar to that of those appointed yardmasters and despatchers. The aim should be to fill these positions with men who have had such experience as would make them familiar with the actual working conditions and the human element involved. While the men appointed under the present method have had some of this experience, they lack general experience, having associated with men and work in only one line. There is education and development in association with men in different lines and of different ideas. In a few years, as in the cases of yardmaster and train despatcher, they lose interest, their primary thought becoming their own ease and comfort. They stay close to their offices, and shift the responsibility of handling the work to the shoulders of subordinates. When this stage is reached we have more deadwood, but in a more serious and vital place, as these men have direct charge of operation, of the trial of men, of employing and weeding out, disciplining and discharging them.

Another weakness of the present plan of promotion is that these men have had no office experience. They depend largely on their clerical force for handling correspondence and records; in fact, the burden of that part of the work falls almost entirely on the clerks. This affords an opportunity for intelligent clerks. They readily see that by relieving their superiors of these burdens their services become almost indispensable, and they come to be largely relied upon, exerting an influence far beyond their position and experience. Since they have the direction of car distribution and tracing, the handling of all correspondence with minor officials and employees, and, in a lesser degree, the settlement of questions of discipline, movement, classification, etc., their influence on the actual operation of the railway is obvious. We will admit that these are intelligent men, good clerks, and that they thoroughly understand the system of office routine. But they are not practical men, and cannot conceive the unnecessary labor, lost motion and confusion that some of their instructions cause. They do not understand the character of men in the operating service, and furnish cause for grievances through their lack of this knowledge.

While the trainmaster should be relieved of the burden of this detail, it should be by assistants—say assistant trainmasters—who should be practical men, and such positions as assistant trainmasters of districts should be abolished, as they cause additional and unnecessary delay and duplication of work. Let the trainmaster's office deal directly with the yardmasters' offices, and have the trainmaster get in closer touch with his yards and yardmasters. Except for a signature, and an occasional view from the rear of a private car, the trainmaster has come to be almost unknown on his division. It must be understood that there are subordinate officials of exceptional character and intelligence—many of them men qualified for almost any position.

Right here it might be remarked that the gap between trainmaster and yardmaster should be lessened, and that the one between yardmaster and conductor should be increased. While in the regular organization the yardmaster is classed as a petty officer, and gets certain consideration and privileges, in practical operation he has come to be classed about on a plane with a conductor, and any clerk, and even messenger in a superintendent's, or trainmaster's office can give him instructions, or oral reprimand, from which there does not seem to be any appeal. There is too much criticism and responsibility given yardmasters as compared to the assistance and consideration they receive.

Everyone below the subordinate officials has to do too much explaining, too much corresponding, and has to keep too many records. It must not be forgotten that yardmasters and trainmen

are operating men, and, therefore, the abolition of this endless detail of correspondence, and in its stead the establishment of personal supervision on the part of the trainmaster, division operator, and chief clerks are the remedies for this situation.

Two things go hand in hand in the handling of employees, *overwork* and *underwork* being opposed to *enthusiasm* and *industry*.

Efficient work can only be secured by enthusiasm, and enthusiasm is generated by recognition of merit, industry and individual responsibility. Under the present system of *en masse* operation, these are lost sight of, and we face a condition of too much work to be performed by some (notably freight agents and yardmen) and not enough by others. We often have too many giving instructions, and not enough to execute them.

The crying want to-day is enthusiasm among employees. This is to be obtained by—

(1.) *Regulation of Promotion on a Graduated Salary Basis.*—The four fundamental operating positions which have been referred to being active and not advisory, it is essential that they should be filled by young men. Men should come into these positions of responsibility before time has seared their enthusiasm. The absence of an outlet for railway trainmen has confined them to a lifetime of braking on some of the railways, and the lack of inducement in the way of promotion on a graduated salary basis on others has deferred their promotion to the position of conductor until they have lost not only activity and interest, but also a respect for the position, and have a disinclination to shoulder the responsibility. If accepted at all, it is reluctantly. Examine the records of passenger or freight brakemen and it will be seen that they are serving the most active years of their life in such positions. Flat increases in wages will never bring results, as experience has shown that the recognition of the whole has only resulted in less interested labor on the part of individuals.

(2.) *Education.*—In order to develop a higher grade of subordinate officials some form of education should be fostered. The substitution of railway clubs for the present Y. M. C. A. and rest houses will solve the problem. Education can never be made attractive with a religious feature attached, as the religious feature, no matter how liberal, is bound to predominate to the exclusion of the educational feature. Two courses should be established, a primary course including English, stenography and primary railroading, and a higher course including railway finance, engineering and operation. With this plan as a basis, and premising that the solution of the problem of a higher class of subordinate officials is a graded and systematic line of advancement, we submit this plan as one that should be conducive to developing a higher grade of officials for these subordinate positions: Since yardmasters receive, classify and start all trains the position of yardmaster should be made the center to which all promotions gravitate and from which all radiate, in the actual operation of a railway. This can be accomplished by selecting young men from the engineering, telegraph, clerical and train services, and placing them in the less important yardmaster positions, of which there are many, in which knowledge of operation can be gained without the entire responsibility of directing movements being carried. One year's service in this line should qualify a man to handle a yard. He should put in another year in charge of a yard where he will be entirely responsible for movements.

There is a special qualification to make a successful yardmaster which all men do not possess. It is not essential in the working out of this plan that all men should be successful yardmasters, but it is essential that all men interested in the operation of a railway should have a knowledge of yard operation and train movements, and also know the qualifications of a man who can handle them successfully. From this point, then, the men that do not show qualifications as operating men should be turned back to the lines from which they came, not with the idea of closing their avenues of promotion, but with the idea of promoting them through the engineering, telegraph and clerical forces just as far as they are qualified to go, even to the

position of superintendent, and beyond, as many of them might prove better executives than some of the more successful operating men. Let the men who show efficiency in operation go up through the regular operating line, that is, through the positions of assistant trainmaster and trainmaster.

The merit in this plan would be that college, office and practical men would meet on common ground; the benefits would be mutual; education and originality on the one hand, practical knowledge on the other. They would discover that they all belong to the same human family, and class prejudice would gradually disappear.

It is not the best practice to make train despatchers direct from operators; they should first have the experience of yardmaster. There is enough flexibility in the matter of salary to promote from operator to yardmaster and yardmaster to train despatcher, and train despatcher back to yardmaster, or up to assistant trainmaster.

We only include four branches of the service in this outline, but more with the idea of a working hypothesis than to exclude men from other branches of the service. Agents and enginemen can easily come under a plan of this kind.

All the foregoing suggestions are embodied in the following chart, showing the order of promotion through the office of yardmaster from and to the various subordinate and superior positions.

			Superintendent.		
			Trainmaster.		
			Chief Clerk.		
			Higher Engineers.		Division Operator.
			Yardmaster.		Train Despatcher.
Division Freight Agent.	Road Foreman Eng'm.	Engineman.	Train Despatcher.	Clerk.	Engineer.
Agent.	Conductor.	Brakeman.	Operator.		

In conclusion, investigation will prove that the lack of a progressive organization—the absence of a system of promotion on a graduated salary basis—has resulted in a system which runs the expense of operation into millions annually above what it should be. This is as much due to lack of interest and intelligent handling as to an unwieldy organization. The lack of individual interest, effort and responsibility, the existence of so much petty and so little real responsibility, must be made good by increased force and augmented cost, which would be avoided by a system such as is here recommended.

STEAM TURBINE ELECTRIC LOCOMOTIVE.

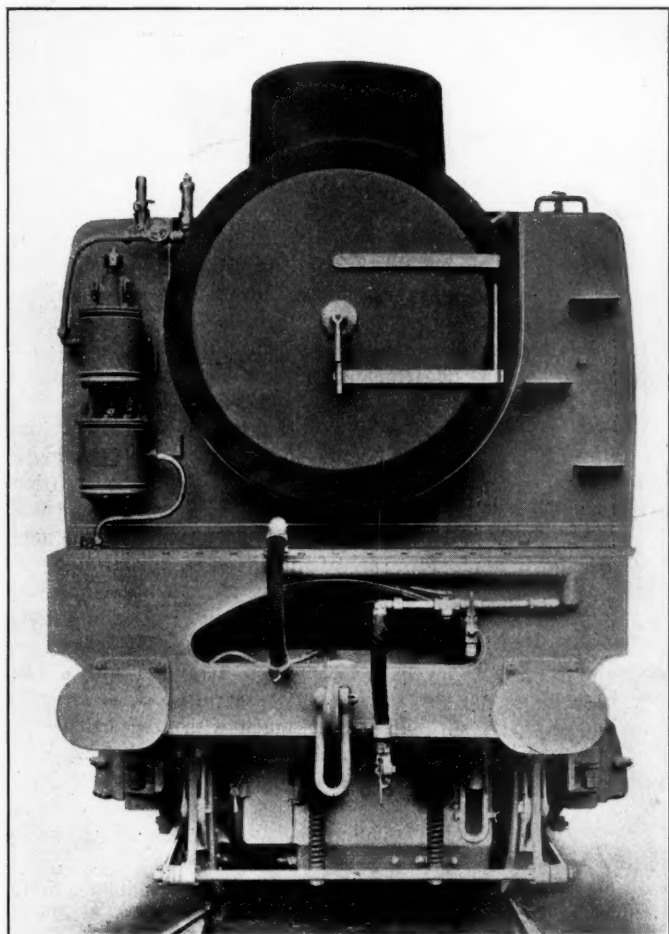
Last October Hugh Reid, in his presidential address to the Glasgow University Engineering Society, briefly described the Reid-Ramsay turbine electric locomotive, which was then being built by the North British Locomotive Co., Ltd., Glasgow.

This engine has been completed, and has made its preliminary trial on the main lines of the Caledonian and the North British railways, with a saloon carriage attached.

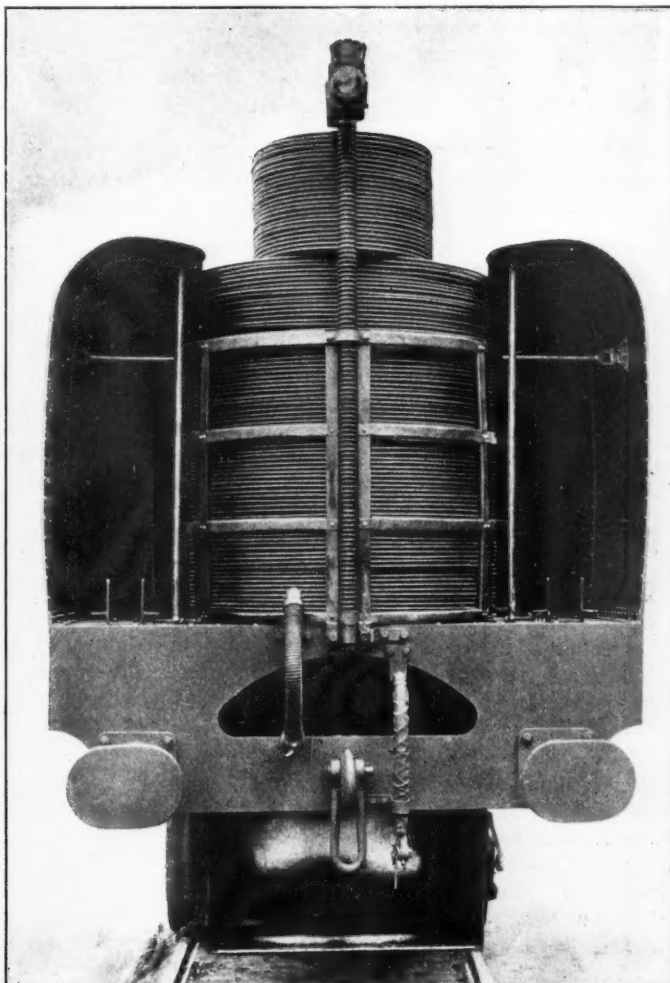
Steam is generated in a boiler of the ordinary locomotive type, which is fitted with a superheater, and the coal and water supplies are carried in the side bunkers and side water tanks at both sides of the boiler. The steam from the boiler passes into a turbine of the impulse type running at a speed of 3,000 revolutions per minute, to which is directly coupled a continuous-current, variable-voltage dynamo. The dynamo supplies current up to 600 volts to four series-wound traction motors, the armatures of which are built on the four driving axles of the locomotive. The exhaust steam from the turbine passes into an ejector condenser, and is, together with the circulating condensing water, delivered eventually to the hot well. As the steam turbine, unlike the reciprocating steam engine, requires no internal lubrication, the condensation water is free from oil, and consequently is returned from the hot well direct to the boiler by a feed pump. The water evaporated by the boiler is therefore returned to the boiler again and again, and the supply of water carried in the tanks is actually circulating water for condensation purposes. This condensing water is circulated within a closed cycle by small centrifugal pumps driven by auxiliary steam turbines placed alongside the main turbine and dynamo. The cycle of condensing

water is from the tanks through the first pump, then through the condenser, where it becomes heated in condensing the exhaust steam, and then to the hot well. From the hot well it passes through the second pump to the cooler, situated in front of the locomotive, where the full benefit of the blast of air caused by the movement of the locomotive, aided by a fan, is utilized for cooling the hot circulating water. After passing through the

fan is placed within the cooler so that it will deliver hot air to the boiler fire and at the same time assist the current of air through the cooler. The small switchboard and the instruments required, the controller for grouping the four motors in series—series parallel and parallel, according to the draw-bar pull to be



Rear End of Locomotive.



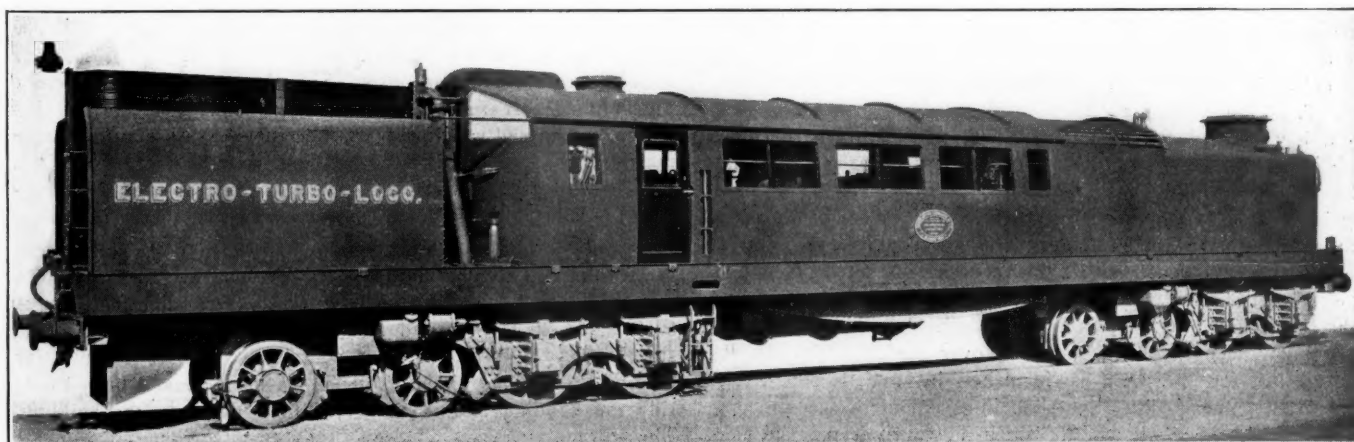
Front End of Locomotive.

cooler, the water is returned to the supply tanks ready for further condensation duties.

It is obvious that the condensation of the exhaust steam deprives the locomotive boiler of the usual exhaust blast which induces the draft through the fire-box and boiler tubes. In the experimental locomotive, the induced draft is replaced by forced draft provided by a small turbine-driven fan. The

exerted—and the regulator for controlling the voltage in the electrical circuit, and consequently the speed of the train, are all within easy reach of the engineman.

The foregoing comprises the main and auxiliary machinery of this experimental locomotive. The whole is mounted on a strong underframe, which is carried on two eight-wheel articulated trucks, that will easily negotiate curves. Each truck carries two



Steam Turbine Electric Locomotive.

of the four driving motors already referred to. As the engine is intended for express passenger main line work, it is hoped to obtain comparisons from its actual working with the performances of the reciprocating steam locomotives, especially as regards the relative consumption of fuel and water, the efficiency of transforming the energy of steam into drawbar pull, and the relative rapidity of acceleration.

Most of the component parts of this locomotive have already proved themselves effective and efficient in other applications; the novelty lies in the combination of the different elements.

LOCOMOTIVE AND CAR SHOPS OF THE NATIONAL TRANS-CONTINENTAL, WINNIPEG, CANADA.

The locomotive and car shops now under construction on the line of the National Trans-Continental Railway, about six miles east of Winnipeg, Can., are designed to care for the general repairs for 18,000 miles of line, and will have a total floor space of 17 acres. The various buildings are arranged about a midway, which runs north and south across the property, and are served by a series of standard gage service tracks, branching off from the yard tracks at the south. Communication between the buildings is obtained by narrow gage tracks and an over-head traveling crane, which runs the full length of the midway.

The buildings for locomotive work are located on both sides of the midway, and south of the through track, while those for car work are north of this track. The plant is arranged with provision for 100 per cent. extension of each building. With the exception of the storehouse, oilhouse and stores platform, the buildings are of steel construction, with self-supporting steel frames, concrete foundations and concrete walls up to the windows. The superstructure masonry is of brick and is carried up into the parapet walls around the buildings, and capped with concrete coping. The roofing of all the large buildings is composed of felt and asphalt, covered with gravel. The skylights are carried on steel ribs with rolled copper sheathing to carry the glass. Copper is used for all flashing, gutters and ventilators.

Interior illumination will be provided by Cooper-Hewett lamps, and the buildings will be heated by direct and indirect radiation. High and low pressure steam, water, compressed air and drinking water are distributed throughout the various buildings, with numerous outlets. Oil is distributed under pressure from the storage tanks to the furnaces in the boiler shop, while an accumulator provides pressure for operating the various hydraulic machines. The electric traveling cranes throughout the plant are equipped with alternating current motors and are operated directly from the three-phase circuits. A three-inch wooden floor, spiked to sleepers bedded in bituminous concrete, is used in most of the shops.

LOCOMOTIVE DEPARTMENT.

Machine and Erecting Shop.—This shop has three bays, 40 ft., 60 ft. and 70 ft. wide, respectively, and 613 ft. long. The 70-ft. bay is 50 ft. high and is laid out with 25 cross pits. There are two entrance tracks for locomotives. A 120-ton crane serves the entire bay, handling all of the locomotives to and from the pits. A 10-ton crane for general work also serves this bay. The 60-ft. bay is used for heavy individual motor driven machines and is spanned by two 10-ton cranes for handling material. The lye vat is in this bay, and also the flue shop. The 40-ft. bay is devoted to light machine work, the machines being group motor driven. The riveting tower is located at the east end of the bay and is equipped with a 20-ton crane for handling boilers. The indirect heating plants, locker rooms, lavatories, tin shop and light repair and brass department are located on a balcony running the full length of the shop and over the 40-ft. bay. Compressed air for the shop is furnished by two motor driven compressors, thus making this shop independent of the air compressor in the power house, to which, however, it may be connected.

The Boiler and Tank Shop.—This shop has four bays, 30 ft.,

50 ft., 60 ft. and 65 ft. wide, respectively, 180 ft. long and 36 ft. high. The 65-ft. bay has a 20-ton crane and is laid out with tracks and has a capacity for nine tanks. The 60-ft. bay is for general boiler work and is served by a 30-ton traveling crane. An inspection pit at the north end of the bay provides for testing. The 50-ft. bay, devoted to heavy machinery, both individual and group motor driven, is spanned by a 10-ton crane. The 30-ft. bay is used for light motor driven machinery in groups, and above 100 ft. of it extends a balcony on which is carried the indirect heating apparatus and the locker rooms, etc. The remainder of the bay is served by a five-ton electric traveling crane. An air compressor is installed in this shop for supplying the compressed air used in it. The motor driven hydraulic pumps and accumulator for supplying hydraulic pressure for the plant are located in the north end of the shop.

Forge Shop.—This shop is 260 ft. x 100 ft., spanned by a single truss. Mast cranes, with jibs swinging from the furnaces to the hammer, handle the heavier material. Along the south side of the building is a long line of double forges for handling the lighter work. The spring department is located in the north-west end of the shop and handles the spring work for both locomotive and car departments. The machinery, etc., is driven from line shaft by three 40-h.p. motors, carried on wall brackets. A motor driven blower furnishes the necessary blast for the furnaces through underground and over-head piping.

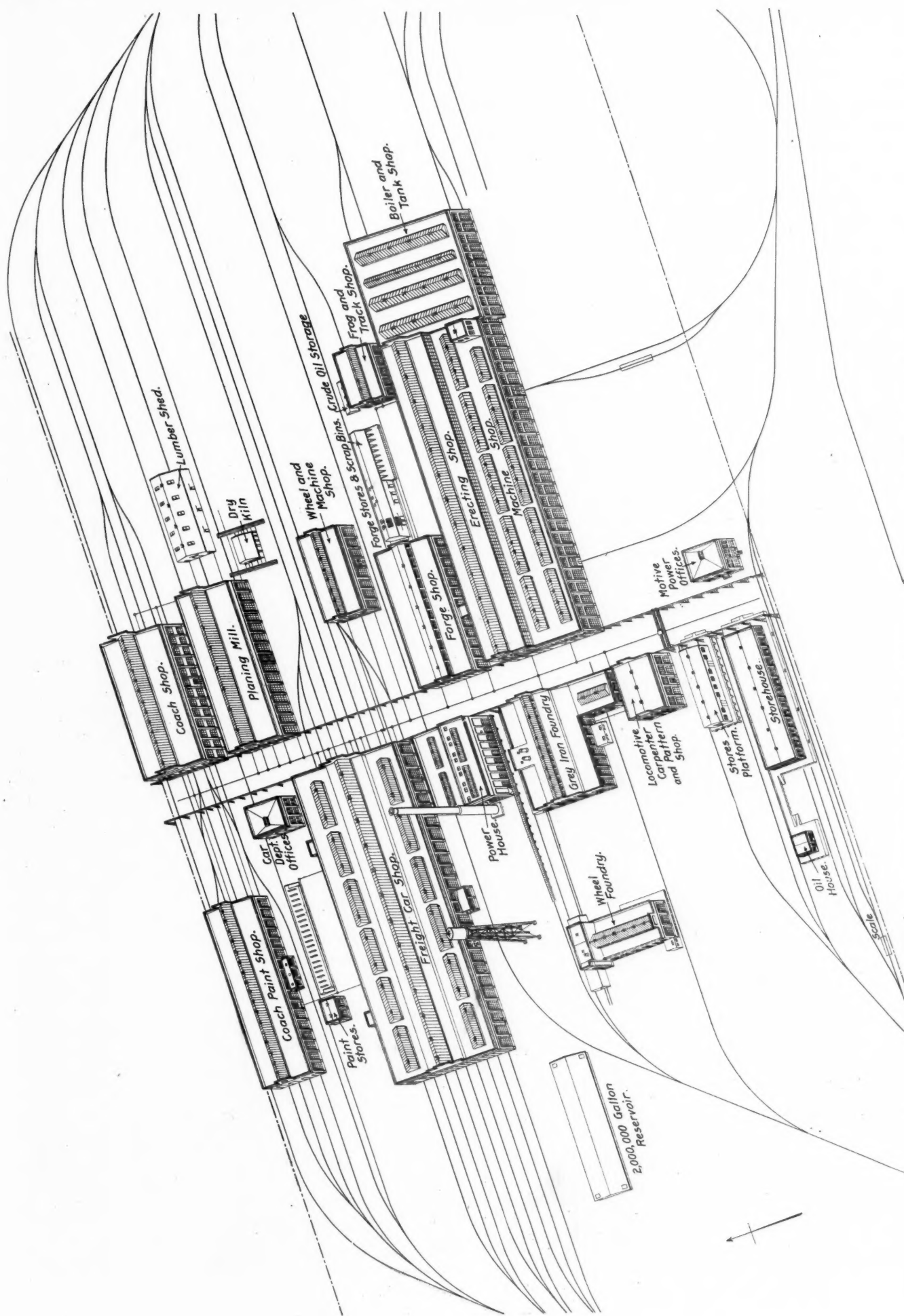
Forge Stores and Scrap Bins.—This building is a frame structure, 30 ft. x 220 ft., built on a light concrete foundation. The east 100 ft. is built as a roofed platform, with the floor four ft. above grade for conveniently handling material to the cars. This platform is divided into bins for sorting and storage of scrap. The western portion is enclosed with plank lining inside and drop siding outside, forming storage for coke, coal and iron stock. The iron stock room is arranged with an extensive rack system for storing the different stock sizes. The coal and coke storage bins are arranged with roof hatches, so that cars may be unloaded by a clam shell bucket and crane.

Frog and Track Shop.—This shop, 60 ft. x 100 ft. x 24 ft. high, is designed to handle repairs to frogs, switches, interlocking plants, etc. It is spanned by a 10-ton electric traveling crane and is equipped with saws, light hammers, drills, planers, etc.; also two groups of small machines driven from line shafts for the lighter rod and bolt work.

Crude Oil Storage.—This is a fireproof concrete building 25 x 60 ft., the floor of which is 8 ft. below grade, the side walls projecting 2 ft. 6 in. above grade. Four iron storage tanks, with a capacity of 8,000 gals. of crude oil each, rest on a concrete foundation. Compressed air connections are made to these tanks by which the oil is forced out and distributed to the various buildings. The tanks are filled by gravity from the tank cars.

Storehouse.—This building is placed on a reinforced concrete platform 4 ft. high. The platform is 85 ft. wide, 300 ft. long and projects 15 ft. into the midway, thus providing a large space which can be served by the midway crane in handling supplies from the storehouse to the various buildings. The storehouse building is of brick, 60 ft. x 260 ft., with a reinforced concrete roof carried on concrete posts. Side doors along both sides of the building give ready access from the loading platform. The building is lighted with incandescent lamps. The office has maple flooring, while the rest of the building has a cement-finished top on the reinforced concrete flooring. An extension of the storehouse platform, 100 ft. long, connects with that of the oil house.

Oilhouse.—This is a brick building, 30 ft. x 40 ft., with a concrete roof and divided into two rooms, one for the oil pumps and the other for storing oil cans, waste, etc. The platform is 50 ft. wide, 70 ft. long and 4 ft. high, and similar to that at the storehouse. A 10-ft. basement contains nine storage tanks for holding the various kinds of oil. A gasoline tank is buried outside the building and is connected to a pump in the building. The storage tanks are filled either by gravity from tank cars or from barrels emptied into fill boxes set in the platform floor and piped to the tanks. The oil is handled in the pump room by



General Plan of Locomotive and Car Shops, National Trans-Continental, Winnipeg, Man.

Bowser measuring pumps, one pump being connected to each tank.

Stores Platform.—This is a large platform of reinforced concrete construction, 56 ft. x 180 ft. and 4 ft. high, carried on concrete posts. The platform projects 15 ft. into the midway, so that the midway crane may handle material from the platform to the other buildings. On this platform is erected a light steel framework, enclosed on the sides and ends with corrugated iron and roofed over. A five-ton hand-operated crane serves the building, a wide crane door at the front permitting it to run out over the platform.

Carpenter and Pattern Shop.—A two-story building, 70 ft. x 100 ft., with a self-supporting steel frame on concrete foundations, is used as a carpenter and pattern shop. The second floor and the roof are of reinforced concrete, making the upper part of the building practically fireproof; fire doors are also used. The ground floor has 3-in. wood flooring and is used as a carpenter and pattern shop, being equipped with light woodworking machinery driven from line shafting. An enclosed stairway leads to the pattern storage above. An elevator, operating in a concrete shaft equipped with fire doors, is installed for handling patterns to and from the storage room. The windows are glazed with wire glass and the room is made as nearly fireproof as possible.

Gray Iron Foundry.—The gray iron foundry, which will supply both the locomotive and car departments, is 130 ft. x 200 ft., with a cleaning room annex 60 ft. x 80 ft. The main foundry has a central bay 70 ft. wide and two side bays each 30 ft. wide. The central bay is the general molding floor and is spanned by a 15-ton electric traveling crane, equipped with a five-ton auxiliary hoist for handling light material. Small jib cranes are attached to the columns for handling flasks, etc. The 30-ft. bay on the north side has a molding floor at the west end and the core room and core ovens at the east end, each served by a one-ton hand-operated traveling crane. There are three core ovens, two with shelves and rack cars for general small cores and one large oven with a platform car for cylinder cores and other large work. The latter oven is served by a five-ton bracket crane.

Between these two departments on the north side is the cupola room with two cupolas, 84 in. and 72 in. in diameter. The scale room for weighing charges and the blower room on an elevated steel platform are also in the cupola room. The core ovens are fired from this room, thus keeping all the ash, etc., in one place. Loaded cars, after weighing, are taken by a pneumatic elevator to the charging room, where they are handled by pneumatic charging machines. The charging floor is of steel plate, with a transfer table and storage tracks for placing loaded cars for charging. The cupola room and charging floor cover a space 30 ft. x 40 ft.

The 30-ft. bay on the south side of the building has the brass foundry at the west end enclosed with expanded metal screens 10 ft. high. This foundry is equipped with brass furnaces and complete equipment, and is served by a one-ton hand-operated traveling crane. The lavatory and locker rooms are also in this bay, as is the heating apparatus for the indirect radiation heating system. The cleaning room is at right angles to the main building and is spanned by a five-ton electric traveling crane. A service track runs through the room, so that clean castings may be carried direct to cars for shipment. The molding sand is stored in bins on the south side and is delivered by cars over the service track and distributed over the industrial tracks inside the building.

Along the north side of the building, between the service track and the foundry, is a long galvanized iron shed roofed in and divided into several compartments. The coke and pig and scrap iron are loaded from the cars under cover and taken into the foundry over the industrial tracks, which are also under cover between the bins and the building. It is important to have both the material and handling tracks under cover on account of the severe winter weather. In addition to the foundry equipment mentioned above, a gravity molding machine and a brake-shoe

molding machine have been installed on the molding floor.

Office Buildings.—The locomotive and car departments have separate but similar office buildings. They are two-story structures, 60 ft. x 68 ft., with steel interior framing and maple floors. The offices are on the first floor and the drafting files and blueprinting rooms are on the second floor. Vaults are carried up from the basements to the roofs, providing separate vaults for each floor. The basements are used as testing laboratories, storage rooms, etc.

CAR DEPARTMENT.

Coach Shop.—The coach repair shop is 115 ft. x 260 ft. It has four longitudinal tracks, providing for 12 standard coaches. An industrial track for handling material runs between each pair of standard tracks. A 16-ft. balcony extends along each side of the building, with a light wall enclosing it. There are windows in this wall, or partition, as well as in the outside wall. Material is delivered to the balconies by hoists located at the ends of the balconies. The north balcony is devoted to cabinet work, being equipped with light tools, such as scroll and band saws, lathes, drills, surfacers, etc., which are driven from a line shaft. On the main floor directly below the north balcony are a number of heavy wood-working tools, most of which are individual motor driven. The south balcony is divided into several compartments for upholstering, tinsmithing, varnishing, etc. A small brass shop with lathes, a small planer, drill, two buffing machines and a lacquer oven are located in the west end. On the main floor below the balcony are located the nickel plating department, with its buffing wheels, sash washing sink and the lavatories, locker rooms and indirect heating apparatus. The building has a wooden floor and the balconies have concrete floors.

Coach Paint Shop.—This building is 67 ft. x 340 ft., with four through tracks to accommodate 16 standard coaches, and two narrow gage service tracks.

Freight Car Shop.—This building is 200 ft. x 600 ft., with nine through tracks to accommodate 108 freight cars. It is divided into three equal bays, 65 ft. wide, each of which has three car repair tracks, with two industrial narrow gage tracks. The two side bays have a clear height of 20 ft., while the center bay has a clear height of 30 ft. and is spanned by a 20-ton electric traveling crane with a 5-ton auxiliary. The center bay is designed for handling future steel equipment. On each side of the freight car shop are platform racks and bins for storing prepared rods, bolts, etc. These are served by industrial tracks which run through the shop.

Paint Stores Building.—A small building, 30 ft. x 40 ft., is used for storing, mixing and delivering paint, etc., for the two paint shops. It is fitted with tanks for the various oils and varnishes, bins for dry colors, glass racks, stencil racks and washers, and a color grinder and a putty mixer. Barrels of oil, etc., are handled from the platform, which surrounds the building, by a small telfer hoist which runs along the interior of the shop.

Dry Kiln.—The dry kiln is a concrete and brick building, 40 ft. x 50 ft., divided lengthwise into two kilns. There are two large entrance doors at each end, with tracks running in. The doors are double, with an air space, as are the walls. The coils for heating are placed on the concrete floor. The kilns are controlled from a small cabinet in which are the steam and return control valves, lighting switches, recording thermometers, etc.

Planing Mill.—The planing mill is 100 ft. x 300 ft., and so arranged that standard cars of material can be run in and unloaded at the machines. The north side of the shop is devoted to sill work and the machines are arranged so that the material goes through without doubling back. The south portion of the shop handles the flat work for flooring, sheathing, etc. At the west end of the shop is the department for door and sash work. On the south side, at the center, is located the lavatory and locker room, and on a steel platform above the indirect heating apparatus. On the same platform are the exhausters fans for dust, shavings, etc.

Wheel Foundry.—The wheel foundry is 70 ft. x 150 ft., laid

out on the straight line floor principle, with four floors of 25 wheels each, giving a capacity of 100 wheels per day. There are 32 annealing pits and two pitting cranes. Wheels are cleaned and loaded on the cars from a platform at the level of the pits. The cupola room, core room and charging floor are at the north end of the building and are equipped with a pneumatic elevator, scale room, storage tracks, etc. There is a wheel breaker between the wheel and the grey iron foundries.

Wheel and Machine Shop.—This is a building 70 ft. x 160 ft., spanned by a 10-ton electric traveling crane and equipped with wheel-boring mills, axle lathes, wheel press, wheel lathes, tire furnaces, etc., for wheel work, and with arch bar drills, lathes, planers, drills, nut tappers, grinders, etc., for general car shop machine work.

POWER PLANT.

The power house is 110 ft. x 150 ft., divided lengthwise by a brick fire wall into two rooms, 45 ft. and 60 ft. wide, respectively. The boiler room, 45 ft. x 150 ft., is arranged to receive ten water tube boilers in units of about 400 h.p. each. Two of these boilers have Dutch ovens for burning refuse from the planing mill; the others are equipped with chain grate stokers. The ash pits are furnished with chutes for carrying ashes, by a conveyor, to cars outside of the building. The boiler room and basement floors are concrete; the shafting, etc., for driving the stokers is carried along the ceiling of the basement. The engine room, 60 ft. x 150 ft., has a pump pit 16 ft. wide and 8 ft. deep, running along the entire length of the fire wall. In this pit are located the air receiver for the compressor; the vacuum pump, the fire, boiler, service and well pumps, and the feed water heater.

There are three 500-k.w., a.c. generators, driven at 150 r.p.m. by direct-connected cross-compound Corliss engines; one 250-k.w., a.c. generator, driven by a simple engine, and two 150-k.w., d.c. generators, one driven by a simple engine and the other by a motor. There are two exciter units driven by a simple engine, and a 1,500 cu. ft. capacity Corliss engine driven air compressor. The engine room is spanned by a 10-ton hand-operated traveling crane. The floor is polished maple, laid on a false floor, carried on sleepers, bedded in bituminous concrete. The chimney is 11 ft. in diam. and 200 ft. high. A 100,000-gal. tank, 125 ft. above grade gives pressure for the general water service distribution. A smaller tank of 10,000 gal. capacity is hung just below the large tank, providing storage and distributing pressure for drinking water.

WATER SUPPLY.

The soft water supply is obtained from a pumping station on the bank of the Red river, just above the city of Winnipeg. The pump house has suction pipes running out into the river, connected to vertical triplex high-speed pumps, with a capacity of 1,000,000 imperial gals. in 24 hrs. These pumps are direct connected to gas engines. A duplicate gas producer plant is

installed to render a shut-down practically impossible. From the pump house the water is conveyed six miles to the shop, through a 12-in. diam. wire-wound wooden stave main. The pipe line empties into a storage settling reservoir with a storage capacity of 2,000,000 imperial gals. This reservoir is built of concrete, 60 ft. x 270 ft. and 25 ft. deep, with a dividing wall running lengthwise, so that half of the reservoir may be emptied for cleaning. The surrounding wall and floor are of mass concrete, and the center dividing wall is of reinforced concrete. Close to the roof are hung a number of pipe coils for heating in winter to prevent the ice forming too thick on the top of the water and thus interfering with the outlet pipes, etc. Water is drawn from this reservoir for the high level tank, and connections are also made to the fire pumps in the boiler house.

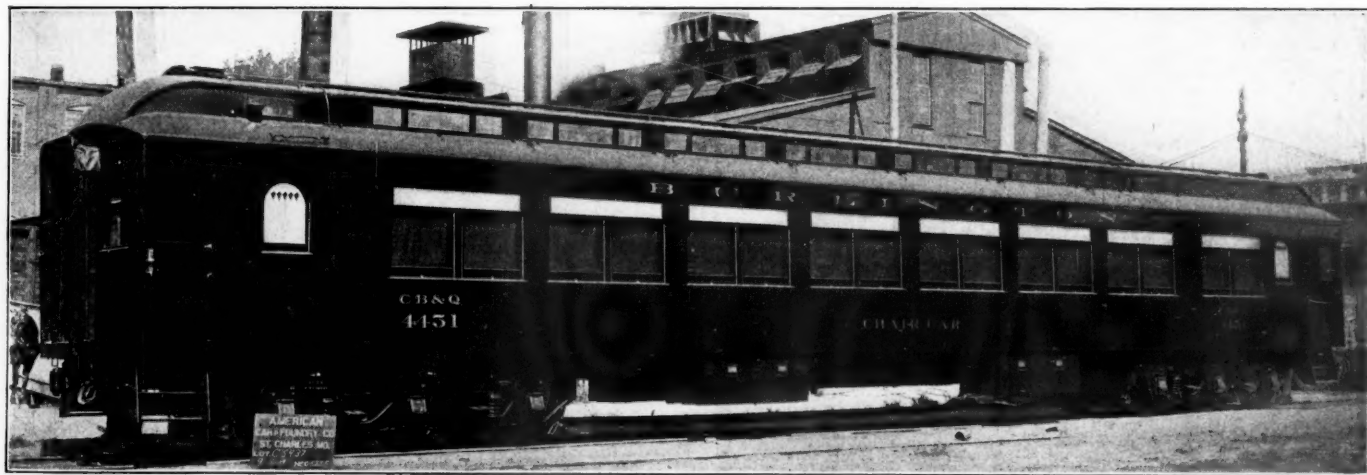
SEWAGE SYSTEM.

As there is no municipal sewer into which to drain the shops it was necessary to install a sewer system. A gravity system of tile collecting pipes runs through the shop site connecting with roof downspouts, sanitary sewers and all drains. This sewer line is arranged with manholes, surface drains, vents, etc., and discharges into a concrete sump forming the basement of the pump house. The next floor carries the centrifugal pumps of 16,000 gal. capacity per minute, with suction pipes running down into the sumps and shafts running to the floor above, where the vertical shaft motors for driving are located. These motors are controlled by an automatic starter, which is operated by a float in the sump below. Under heavy rain conditions the flow from the shops and the grounds is estimated at approximately 16,000 gal. per minute. The pump house is a small reinforced concrete building located about 1,400 ft. from the midway. The two pump discharges run into a single 36-in. diameter banded wood stave pipe, which runs from the pump house to the Seine river, into which it discharges close to its junction with the Red river.

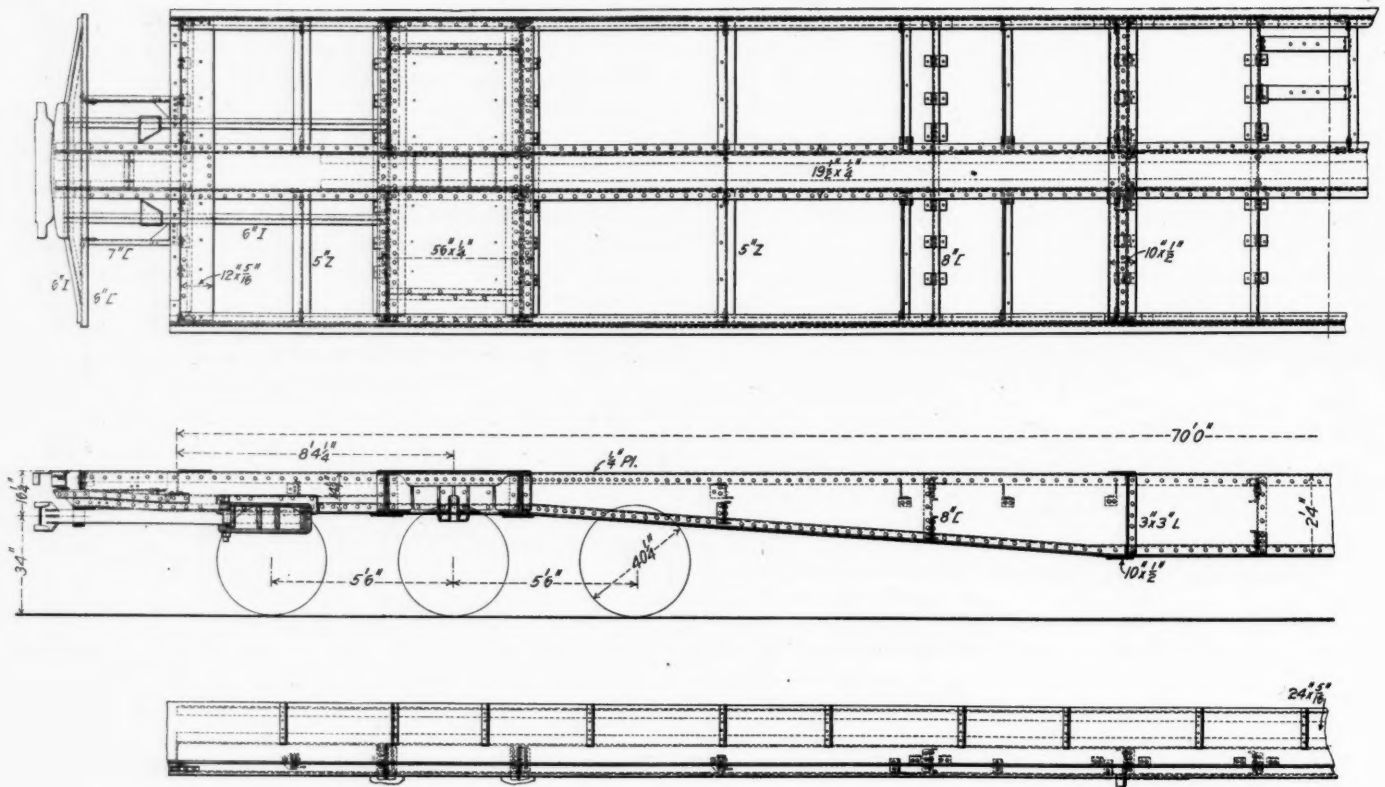
The details of the shop plant were developed and the actual construction carried out under the supervision of Frank W. Walker, M.B., superintendent of the terminal shops, National Trans-Continental Railway.

BURLINGTON CHAIR CAR.

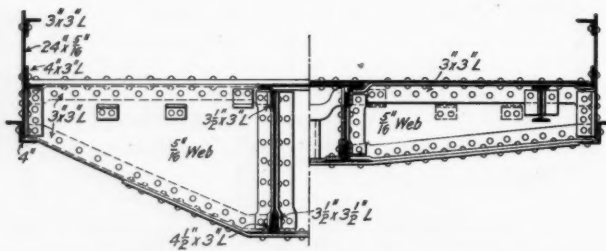
The new Burlington passenger equipment has heavy fish-belly girder underframes and the upper structure of wood. An example of this is seen in the new chair cars for that system, built by the American Car & Foundry Co. The cars are 70 ft. long out to end of sills and 9 ft. 8 in. wide out to side sills. The six-wheel trucks have 41¼-in. steel wheels and plated wood wheel pieces. The two trucks weigh 40,500 lbs. and the car body 78,800 lbs; total, 119,300 lbs. The principal members of the steel underframe are the two fish-belly plate girders, which are ⅝ in. thick, 28 in. deep at the center and 14¼ in. at bol-



Burlington Chair Car.



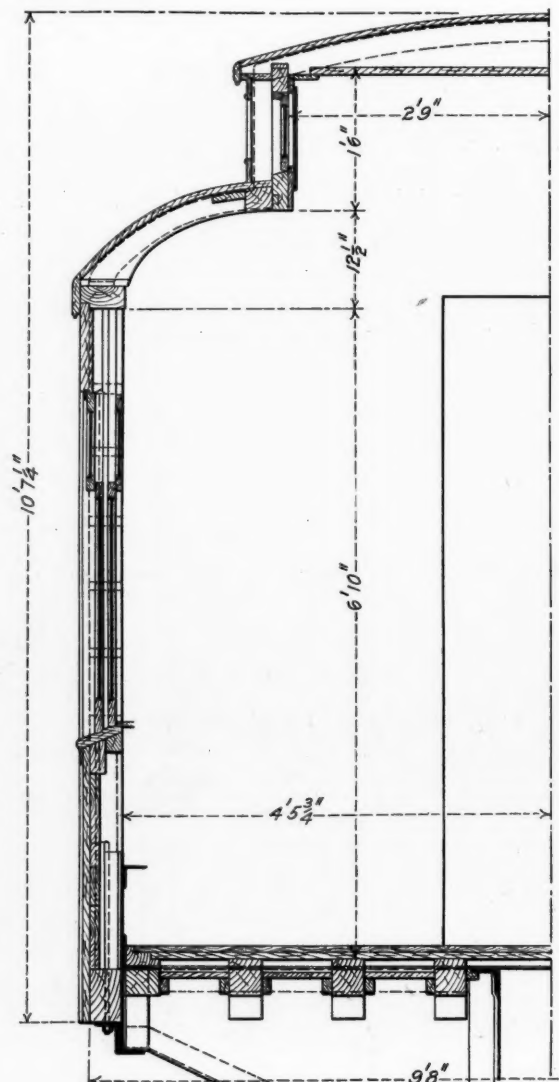
Underframe; Burlington Chair Car.



Cross Sections Through Underframe.



Men's Toilet Room; Burlington Chair Car.

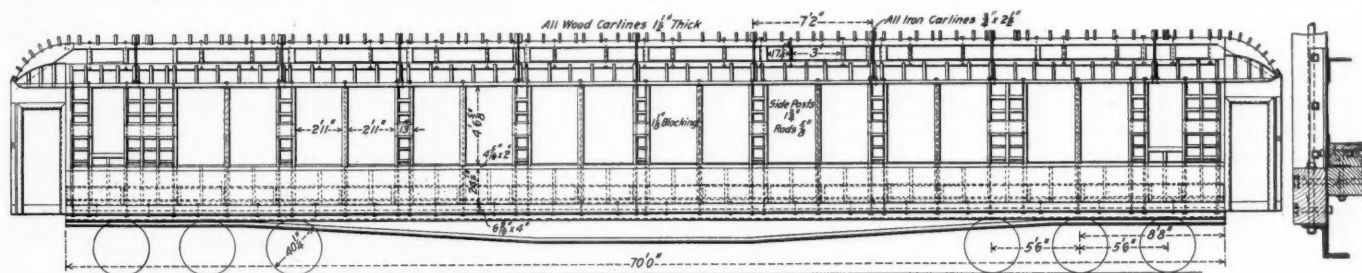


Cross-Section; Burlington Chair Car.

sters, with a top cover plate $\frac{1}{4} \times 19\frac{1}{2}$ in. throughout the whole length. The lower edge of the girder is reinforced by $3 \times 4\frac{1}{2}$ -in. angles on the outside and $3 \times 3 \times \frac{1}{8}$ -in. angles on the inside, and at the top there is an angle $3 \times 3 \times \frac{1}{8}$ -in. There are three wooden intermediate sills $4 \times 7\frac{1}{2}$ in. on each side of the center sill. The side sills consist of plate girders 24 in. deep and $\frac{1}{8}$ -in. thick, reinforced near the top with a $3 \times 3 \times \frac{1}{8}$ -in. angle on the inside, and at the bottom by $3\frac{1}{8} \times 3\frac{1}{8} \times \frac{1}{8}$ -in. Z-bars, and at the floor line by means of $3 \times 4 \times \frac{1}{8}$ -in. angles.

The body bolster is built up of plates and shapes with web

The roofing of the upper and lower deck is covered with No. 8 heavy duck, laid lengthwise and lapped over on the sides of the crown molding. The outside of this duck is painted with two coats of special roof paint, but no paint is used on the underside of the canvas or on the wood before the application of the canvas. The outside finish consists of $3\frac{1}{4} \times 2\frac{1}{4}$ -in. oval section white wood, tongued and grooved. The interior finish is of selected mahogany of superior grade and neat design, without inlay. The ceiling is painted light green. The seats are the Hale & Kilburn walk-over chairs. The covering for the smoking



Side Elevation of Framing.

plates $\frac{1}{8}$ -in. deep. Each bolster consists of two members spaced 4-ft. centers and built into the underframe construction with $1\frac{1}{4}$ -in. cover plate 4 ft. 8 in. x 8 ft. 10 in. The center plates are secured to a substantial steel casting riveted to the main sill, extending the full length between bolster diaphragms. The two needle beams built of shapes and plates spaced 12 ft. apart are 28 in. deep and $\frac{1}{8}$ -in. wide, built into the underframe construction. The location and size of the cross bearers are shown on the drawing. All sills and underframes are coated before riveted with a mixture of 25 per cent. pure lampblack and 75 per cent. pure raw linseed oil.

The framing of the wood superstructure, with dimensions, is

room seats is dark machine buffed leather. The heating is of the vapor system, with separate control in the smoking room, and furnished by the Chicago Car Heating Co. The cars are lighted by electricity, using the head-end system with 54-cell batteries and Gibbs train connectors. The cars are equipped with the Westinghouse LN high-speed brakes, with pressure retaining valves and other late improvements.

REPORT ON PITTSBURGH SUBWAY.*

BY BION J. ARNOLD,
Consulting Engineer.

I. *The Improvements Available* at the present time to provide better rapid transit facilities for the Pittsburgh district are (a) Elevated roads, (b) Subways and (c) Electrification of suburban terminals of steam railroads.

II. *Elevated Roads.* The only available location for an elevated system in the downtown business district would be upon the outlying streets along the rivers, as the structure would not be tolerated in the narrow streets of the more congested central areas. This out-of-the-way location would place an elevated road at a disadvantage.

III. *Subways.* A subway between the downtown business district and certain centers in the outlying districts appears to be a natural development. It is probable that one section of the city will be ready for a subway before the other sections, but eventually all parts of the city should be connected by some unified system of sub-surface transportation.

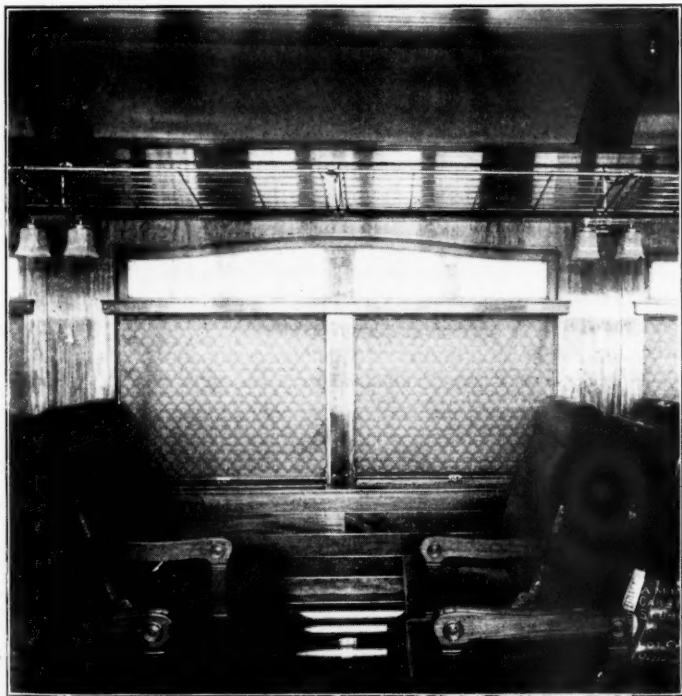
TECHNICAL ELEMENTS OF SUBWAY SYSTEM.

(a) *First Cost.* The first cost of a double-track subway, fully equipped, may be estimated as between \$1,000,000 and \$2,000,000 per mile of single track. A subway system for Pittsburgh should hardly be undertaken unless an expenditure of at least \$30,000,000 is contemplated, half of this amount, at least, to be spent for the sections first built.

(b) *Operating Expense.* Experience has shown that the ratio between operating expenses and gross earnings, under subway conditions, varies between 40 and 60 per cent., with a fair average of 50 per cent. The average operating expense of a surface system is from 60 per cent. to 70 per cent. of passenger earnings, and subways can be operated at a relatively lower percentage that justifies the larger investment in situations where the density of traffic is great.

(c) *Earnings.* The annual earnings from operation should amount to not less than 10 per cent. of the first cost, and seldom will amount to more than 15 per cent., for before reaching this latter figure there no doubt would arise demands for extensions.

*Abstracted from a preliminary report on the possibilities for rapid transit, presented to the mayor of Pittsburgh.



Seats in Burlington Chair Car.

shown on the accompanying drawing. There is a deafening floor between floor beams, with space above filled with mineral wool. The floor proper consists of two courses of boards. The lower course of pine, matched and grooved and laid crosswise of the car, and the upper course of maple, $\frac{3}{4} \times 3\frac{1}{4}$ in., laid lengthwise, and between them there is one thickness of hard finish building paper. The entire main body of the car is covered with imported linoleum.

These figures indicate on what narrow margins enterprises of this character must be financed. Under Pittsburgh conditions, I believe that average annual earnings from passengers equal to at least 12 per cent. of the first cost of the system will be necessary to make a subway practicable.

(d) *Earnings per capita.* If the first section of the subway must earn an amount equal to 12 per cent. on \$15,000,000 or \$1,800,000 per year, the question is: when will it be possible to build it?

The earnings per capita of the surface system are now about \$10 as an average, but certain residence sections of the city run as high as \$28 per unit of "sleeping population" of the district. A conservative estimate would be that if a subway can be designed to serve 150,000 people contributing \$12 each year to the subway in addition to their use of the surface system, then an initial investment of \$15,000,000 would be justified, or at the rate of \$100 per person served.

(e) *Density of Population.* At present the maximum density of population in Pittsburgh over any considerable area is about 100 persons per acre, although one ward, the old Seventh, had a density of nearly 200 per acre; but in many residence districts, such as the East Liberty section, the density is as low as 30 per acre. In New York the density per acre for the lower East Side is about 700 per acre, and in Harlem, which is the best contributing district for the New York subway, the density is 150 per acre, which is the same as the average for the entire island of Manhattan. No doubt there will be considerable development in the line of apartment dwellings, which will raise the present average density of population in many sections, although it will not be safe to count on large contiguous residence areas where the average density will reach as high as 100 per acre. This would indicate that the first section of the subway should be designed to serve an area of about four square miles.

(f) *Combined Surface and Subway Systems.*—It will be wise to count on a combined system using the subway as a main trunk line and the surface railway as a means of collecting and distributing the passengers over a wide area. The tubes should be located and designed so as to accommodate suburban trains coming into the city over the various lines of the present railways, which may be electrified eventually. It will be necessary to design a subway for real rapid transit by eliminating the stops in the short haul territory just outside the business center of the city and to operate trains instead of single car units.

(g) *Location.*—In general, the first section of the subway should connect the downtown district with East Liberty, with two stations in the business center and about three stations in the East Liberty district. The second section of the subway should be built under the river to Allegheny, and the next two sections should consist of loops in the business center and an extension to the South Side.

FINANCIAL CONSIDERATION.

Any subsurface transportation system, to be permanently successful, should be able to carry the following financial burdens:

1. Operating expenses including taxes, damages, insurance and maintenance, which will vary from 40 per cent. to 60 per cent. of the passenger income, depending upon the volume of traffic.
2. An annual depreciation fund which will vary from 3 per cent. to 5 per cent. of the cost of equipment only.
3. An amortization fund which, at 1 per cent. per year on cost of construction (compounded at 2.5 per cent.), will retire the investment in structure in 50 years; or at $\frac{1}{2}$ per cent. per year, would amount to the first cost of construction in 75 years.
4. A contingent reserve fund to take care of extraordinary accidents and other unforeseen contingencies, which should accumulate and be kept invested until it reaches about 5 per cent. of the total cost.
5. Interest on cost, which at present may vary from a maximum of about 8 per cent. with private capital down to about 4 per cent. with municipal credit.
6. Discount fund, which should offset the discount on bonds

or other similar indebtedness in about twenty years.

7. Surplus profits, which in case of private ownership, should be divided with the city on some equitable and agreed basis or used for building extensions.

METHODS OF FINANCING SUBWAYS.

Four subway systems have been built in this country: those in Boston, New York and Philadelphia.

The first Boston subway was constructed by the city, and was rented to the local railway company on a basis of not less than 4% per cent. annual rental upon its total first cost. Arrangements recently have been made, however, for the Boston Elevated Railway to finance the Cambridge extension from Boston, with its own capital.

The original subway of the Interborough company, of New York, was built with money raised upon bonds guaranteed by the city's credit. This money was used in the construction of the subway itself, but the equipment was furnished by a private company which was given the privilege of operating the subway for a period of 50 years with a possible extension of 25 years. The subway of the Hudson & Manhattan was built entirely with private capital, but the company pays an agreed varying annual rental for the use of such streets as it occupies on Manhattan island.

The Philadelphia subway was built entirely by private capital and is used as a downtown terminal for both elevated and surface cars of the Philadelphia Rapid Transit.

The various methods which have been recognized or suggested for financing the cost of subways may be briefly recapitulated as follows:

(a) *Private Capital for Building, Equipment and Operation.* Length of franchise may be for (a) short term, (b) long term or for (c) indeterminate term. Right to purchase should be retained by the city.

(b) *City Credit for Construction, Private Capital for Equipment.* To be operated by contractor for a term of years. Sinking fund should be provided to retire city bonds used in construction. City should have the right to purchase equipment at a fair valuation at the end of the contractor's lease.

(c) *City Credit for both Construction and Equipment, Private Operation.* To be operated by contractor on bonus principle. Sinking funds to be provided for retiring cost, for depreciation and for operating reserve.

(d) *City Credit for both Construction and Equipment, Municipal Operation.* Municipal construction and operation without the use of any private enterprise whatsoever.

(e) *Assessment.* Part or all of the cost to be raised by long term assessment on the property benefited, preferably without accumulation of interest. In case of very poor territory the loss from operation during the first years, while business is being developed, should also be financed by assessment.

RETURN ON INVESTMENT IN SUBWAY.

The earnings and net returns will depend on the following:

1. Density of population served, and rides per capita.
2. Equitable arrangement for exchange of transfers between the subway and the collecting and distributing surface system.
3. Use of subway as a downtown terminal by electrified branches of present steam lines.

In my opinion a subway in Pittsburgh will pay eventually, but there will be a loss during the first years of operation, and particularly so if it be built too soon or upon too large a scale. The subway should not be constructed until definite arrangements have been made with existing transportation systems for the joint use of the subway to the mutual advantage of the companies and the traveling public.

PROBLEMS REQUIRING INVESTIGATION.

In order to determine, more definitely, the prospects of building a subway in advance of actual needs, so that it may become an important factor in influencing the extent and character of the growth of the city and district, it will be desirable to proceed along the following lines of inquiry:

1. Ascertain the best terms which private capital will offer or

accept for building, equipping and operating the subway and for giving the city the right to purchase.

2. Secure by legislation the right for the city to issue bonds of a type self-supporting and independent of the debt limit, so that money for purchasing or constructing a subway and possibly for equipping it also, may be secured by means of the city's credit, and thus reduce to a minimum the fixed charge for interest.

3. Determine what the present street surface railway company will do in regard to interchanging transfers with the subway.

4. Determine what the steam railway companies will do in regard to electrification of their suburban tracks and renting the use of the subway as a downtown terminal or for a through passenger connection for suburban trains.

5. Determine, by comparing the present census with others, the rate of growth of the sections which may be effected by rapid transit development.

6. Ascertain the probable increase in value of real estate in the districts to be served in order to determine whether or not this increase in value of land will justify the building of apartment houses in sufficient numbers to result in a density favorable to subway operation.

7. Investigate the possibilities of raising all or part of the first cost of a subway by assessment on the land benefited by the improvement.

RAILWAY STATISTICS OF THE UNITED STATES FOR THE YEAR ENDED JUNE 30, 1909.

The Interstate Commerce Commission, in the abstract of its annual statistical report for the year ended June 30, 1909, gives statistics for that year from which the principal items are shown in the table below. The report for the year ended June 30, 1908, appeared in our issue of January 14, 1910. The report for 1909 was compiled on substantially the same basis as that for 1908 and differs considerably from previous reports. For instance, in 1908 and 1909 the statements do not include data from reports of companies classed as switching and terminal companies. The comparisons, therefore, between 1908 and 1909 are comparatively accurate, but are not accurate between these two years and the earlier years.

STATISTICS OF RAILWAY IN 1909 AND PREVIOUS YEARS.

	1909.	1908.	1907.	1906.
Miles of road completed.....	2,136,869	233,678	229,951	224,363
Increase, 12 months.....	8,215	5,930	5,588	6,262
*In hands of receivers.....			3,926	3,971
Locomotives, number.....	57,212	57,698	55,388	51,672
Cars owned, passenger.....	45,584	45,292	43,973	42,262
Cars owned, freight.....	2,073,606	2,100,784	1,991,557	1,837,914
Cars owned, total.....	2,218,280	2,244,357	2,126,594	1,958,912
Employees.....	1,502,823	1,458,244	1,672,074	1,521,355
Per 100 miles of road.....	638	623	735	689
Total stock and funded debt†..	13,711.9	\$12,840.1		\$14,570.4
Stock and debt per mile road...	59,259	57,230.0		67,936.0
Gross earnings, millions.....	2,418.7	2,393.8	2,589.1	2,325.8
Average per mile.....	10,381	10,533.0	11,383.0	10,460.0
Passengers carried, millions....	891.5	890.0	873.9	800.0
Carried 1 mile, millions.....	29,109.3	29,082.8	27,718.6	25,175.0
Tons freight carried, millions...†	1,556.6	1,533.0	1,796.3	1,631.4
Carried 1 mile, millions.....	218,803.0	218,381.5	236,601.4	215,877.6
Average rate per ton-mile, mills.	7.6	7.5	7.6	7.5
Average passenger fare per mile, cents.....	1.9	2.0	2.0	2.0

*Not reported in the present abstract.

†In millions. This represents only securities outstanding in the hands of the public.

There is given herewith a condensed income account and profit and loss account of operating roads. This includes both operating and financial transactions of these companies, but does not give any statistics for leased companies. The statistics for leased roads include only money received and paid under contracts and agreements, so that the operating revenues and expenses in the table given below covers all companies. For such items as dividends, taxes, etc., the figures for all companies, including leased companies, will be somewhat different from the figures given in the income account. For instance, the aggregate of dividends declared during the year amounted to \$320,890,830.

The report gives the usual totals of accidents. The most important part of the accident records for the year under review, that given in the quarterly bulletins, has already been published

OPERATING ROADS.

INCOME ACCOUNT.		
Rail operations:		
Operating revenues.....	\$2,418,677,538	
Operating expenses.....	1,599,443,410	
Net operating revenue.....		\$819,234,128
Outside operations:		
Revenues.....	54,527,763	
Expenses.....	50,590,794	
Net revenue from outside operations.....		3,936,969
Total net revenue.....		823,171,097
Taxes accrued.....		85,139,554
Operating income.....		738,031,543
Other income.....		199,041,118
Gross corporate income.....		937,072,661
Deductions from gross corporate income.....		548,908,546
Net corporate income.....		388,164,115
Disposition of net corporate income:		
Dividends declared from current income.....	233,069,739	
Additions and betterments charged to income...	23,675,622	
Appropriations to reserves and miscellaneous items.....	20,632,313	
Total.....		277,377,674
Balance to credit of profit and loss.....		110,786,441
PROFIT AND LOSS ACCOUNT.		
Credit balance on June 30, 1908.....		720,423,740
Credit balance for year 1909 from income account.....		110,786,441
Total.....		831,210,181
Dividends declared out of surplus.....		38,973,760
Difference.....		792,236,421
Other profit and loss items—debit balance.....		83,708,013
Balance credit, June 30, 1909, carried to balance sheet.....		708,528,408

in the *Railway Age Gazette* (November 19, 1909, page 968); the totals here given are from the annual reports of the roads and include wayfarers at crossings and trespassers on the tracks of the railways. The following are the principal totals:

	Killed.	Injured.
All classes of persons.....	8,722	104,848
Passengers.....	253	10,311
Ratio to number carried, 1 in.....	3,523,606	86,458
Ratio to number carried one mile, 1 in.....	115,056,611	2,823,133
Other persons.....	5,859	10,309
Trespassers (included in "other persons").....	4,944	5,759
At highway crossings (included in "other persons")...	733	1,830
Ratios of casualties to number employed—		
Employees, all classes, 1 in.....	576	20
Trainmen, 1 in.....	205	9

The abstract indicates that terminal and switching companies are not included in the foregoing totals. These switching companies report 102 persons killed and 975 injured. Whether or not the larger totals include accidents on electric railways does not appear. In the quarterly bulletins electric interurban lines (which in some cases probably include also city street car lines), were included in the accident statistics until within the last six months, but now they are excluded and appear in separate statements. With these changes the value of the statistics for comparison, both the annual and the quarterly, is much lessened if not destroyed.

FOREIGN RAILWAY NOTES.

In Chile this spring the line connecting the capital, Santiago, and the chief port, Valparaiso, 155 miles, with its branches, was to be electrified.

The tunnel for the second track of the Simplon tunnel was by contract to be enlarged and made ready by the original contractors. They have protested against building it; but the Swiss authorities have insisted, and if the old contractors did not take up the work, new bids were to be received for it July 15.

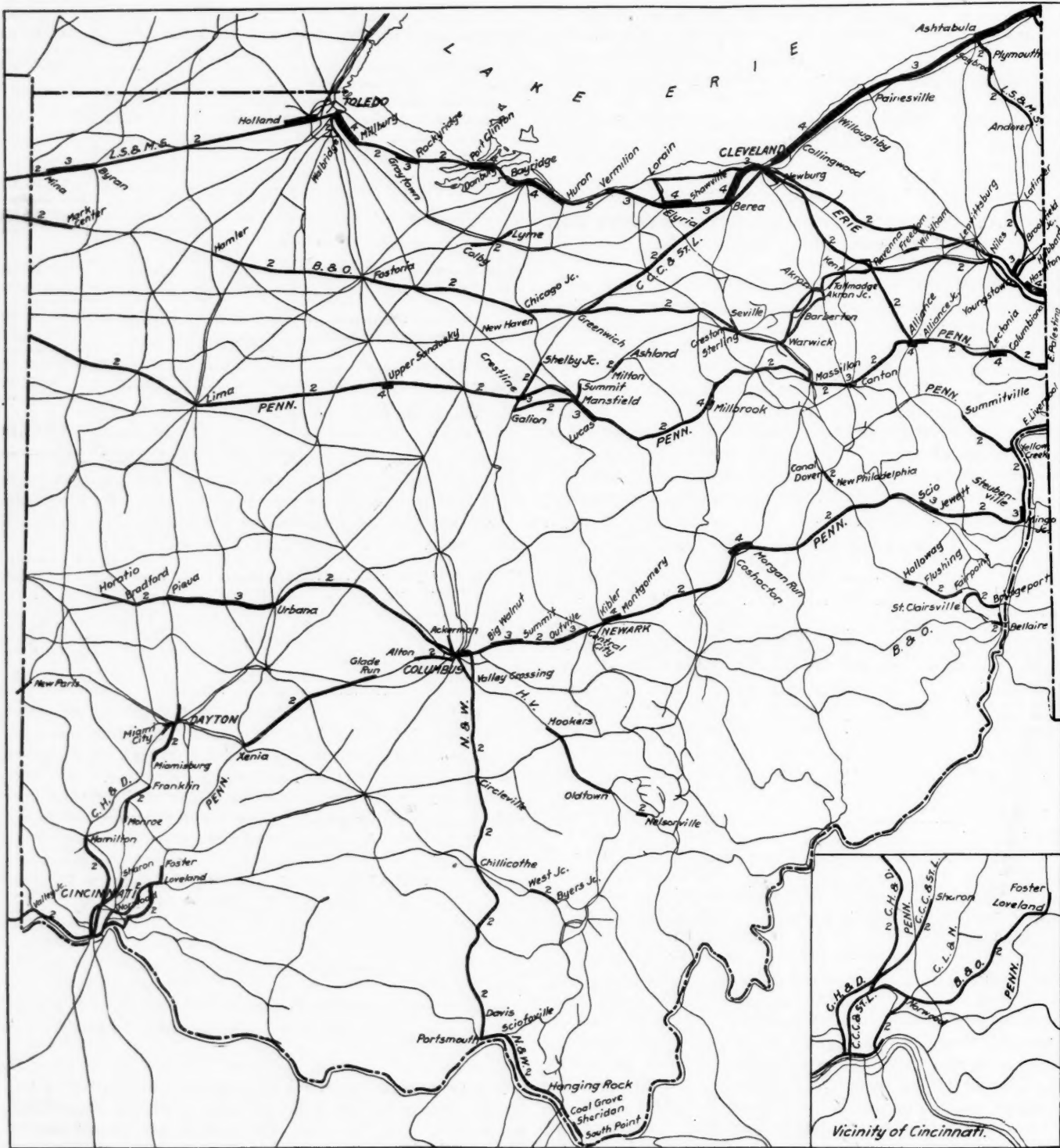
MULTIPLE TRACK RAILWAYS IN OHIO.

The map of Ohio, given herewith, is designed to show all railways in that state on which there are two or more main tracks. The lines in the vicinity of Cincinnati are shown separately in the lower right hand corner because of the small scale of the large map.

The termini of the sections shown on the map are as follows:

OHIO. Baltimore & Ohio.		
	No. tracks.	Approx. miles.
Newcastle Junction, Pa., to Hamler.....	2	290
Mark Centre to Indiana state line.....	2	9
Hazleton to Girard.....	2	7
Cleveland to C. & L. W. Junction.....	2	..
Sterling to Seville.....	2	3
Lorain to Benton.....	2	5
Chicago Junction to New Haven.....	2	3
Kiblers to Newark.....	2	1

	No. tracks.	Approx. miles.
Warwick to Massillon.....	2	12
Canal Dover to New Philadelphia.....	2	3
Holloway to east end of yard.....	2	3
Flushing to Fairpoint.....	2	10
St. Clairsville Junction to Bridgeport.....	2	9
Bellaire to C. & P. crossing.....	2	2
Bellaire to Shicks Mines.....	2	2
Baltimore & Ohio Southwestern.		
Cincinnati to Loveland.....	2	25
West Junction to Byers Junction.....	2	8
Bessemer & Lake Erie.		
Conneaut Harbor to Pennsylvania state line..	2	5
Cincinnati, Lebanon & Northern.		
Cincinnati to Norwood.....	2	5
Cincinnati, Hamilton & Dayton.		
Cincinnati to Hamilton.....	2	25
Greencastle to Dayton.....	2	..
Cleveland, Akron & Columbus.		
Akron Junction to Warwick.....	2	12
N. & W. Junction to Columbus.....	2	..
Cleveland, Cincinnati, Chicago & St. Louis.		
Cleveland to Greenwich.....	2	55
Shelby Junction to Galion.....	2	18



Multiple-Track Railways in Ohio.

	No. tracks.	Approx. miles.
Galion to Marion (joint with Erie).....	2	21
Cincinnati to Valley Junction.....	2	18
Cincinnati to Sharon.....	2	17
Monroe to Franklin.....	2	11
Miamisburg to Dayton.....	2	10
<i>Erie.</i>		
Hubbard to Cleveland.....	2	74
Leavittsburg to Braceville.....	2	4
Windham to Freedom.....	2	5
Ravenna to B. A. tower.....	2	..
Kent to Tallmadge.....	2	5
Akron to Barberton.....	2	7
Sterling to Creston.....	2	3
Ashland to Milton.....	2	3
Summit to Galion.....	2	19
Galion to Marion (joint with Big Four)....	2	21
<i>Hocking Valley.</i>		
Rockwell to Walbridge.....	2	..
Ackerman to Valley Crossing.....	2	11
Hookers to Matown Junction.....	2	23
East Clayton to Nelsonville.....	2	3
<i>Lake Shore & Michigan Southern.</i>		
Saybrook to Painesville.....	3	20
Painesville to Willson Ave (Cleveland)....	4	25
Willson Avenue to West Cleveland.....	2	5
At West Cleveland.....	3	1
West Cleveland to Berea.....	4	9
Berea to Shawville.....	3	9
Shawville to Elyria.....	4	3
At Elyria.....	2	2
Elyria to Vermillion.....	3	14
Vermillion to Huron.....	2	12
Huron to Bay Bridge.....	4	14
Bay Bridge to Danbury.....	2	2
Danbury to Port Clinton.....	4	5
Port Clinton to Rocky Ridge.....	2	16
Rocky Ridge to Graytown.....	3	2
Graytown to Millbury.....	2	15
Millbury to Toledo.....	4	7
Toledo to Nasby.....	2	5
Nasby to Holland.....	4	5
Holland to Bryan.....	3	44
Bryan to Edgerton.....	4	10
Ashtabula to Andover (inc. 2 miles 3d track)	2	25
Latimer to Doughton Junction.....	2	14
Doughton Junction to Youngstown.....	3	6
Air Line Junction to Wagon Works.....	2	2
<i>New York, Chicago & St. Louis.</i>		
At Euclid.....	2	2
Cleveland to Lorain.....	2	26
Lyme to Colby.....	2	9
<i>Norfolk & Western.</i>		
Columbus to Valley Crossing.....	2	10
Valley Crossing to Hanging Rock (includes some sections not finished).....	2	113
Hanging Rock to Coal Grove.....	2	8
Sheridan to South Point.....	2	3
<i>Pennsylvania Lines.</i>		
Pennsylvania state line to East Palestine....	4	2
East Palestine to Columbiana.....	2	10
Columbiana to Leetonia.....	4	3
Leetonia to Alliance Junction.....	2	16
Alliance Junction to Alliance.....	3	4
Through Alliance.....	4	1
Alliance to Canton.....	2	17
Through Canton.....	3	1
Canton to Millbrook.....	2	38
At Millbrook.....	4	1
Millbrook to Lucas.....	2	28
Lucas to Mansfield.....	3	6
Mansfield to Crestline.....	2	14
In Crestline.....	3	1
Crestline to Upper Sandusky.....	2	28
At Upper Sandusky.....	4	1
Upper Sandusky to Indiana state line.....	2	85
Union Station, Cleveland to St. Clair Street.	2	..
St. Clair Street to Woodland Avenue.....	3	..
Woodland Avenue to Newburgh.....	4	3
Newburgh to Alliance.....	2	48
Summitville to East Liverpool.....	2	24
East Liverpool to Rochester, Pa.....	2	18
Yellow Creek to Mingo Junction.....	2	20
Niles to Kenwood, Pa.....	2	..
West of Detour Junction.....	2	1
Walbridge to Toledo.....	2	5
Pennsylvania state line to Steubenville.....	2	..
Steubenville to Mingo Junction.....	3	3
Mingo Junction to Jewett.....	2	23
Jewett to Scio.....	3	5
Scio to Morgan Run.....	2	43
Morgan Run to Coshocton.....	4	4
Coshocton to Montgomery.....	2	32
Montgomery to Newark.....	4	3
Newark to Central City.....	2	4
Central City to Outville.....	3	8
Outville to Summit.....	2	8
Summit to Big Walnut.....	3	6
Big Walnut to Columbus.....	2	8
Columbus to Urbana.....	2	47
Urbana to Piqua.....	3	24
At Piqua.....	2	2
West of Piqua to Bradford.....	2	10
Bradford to Horatio.....	2	4
Columbus to Alton.....	2	9
Glade Run to Xenia.....	2	38
Foster to Cincinnati.....	2	27
Dayton to Miami City.....	2	1
New Paris to Richmond, Ind.....	2	5
<i>Pittsburgh & Lake Erie.</i>		
Lowellville to Haselton.....	4	..
Haselton to Youngstown.....	2	8
<i>Toledo & Ohio Central.</i>		
At Columbus.....	2	4

PROPOSED STANDARD FORM OF RAILWAY-TELEPHONE AGREEMENT.

At the recent meeting of the Railway Telegraph Superintendents' Association at Los Angeles (*Railway Age Gazette*, July 8), a special committee presented the following report:

At the quarterly meeting of the Eastern Division of the association, held in Washington last November, the "standard telephone operating agreement" for railways was taken up for discussion, and the committee of five then appointed reported its conclusions. The proposed agreement is well designed to meet existing laws or any contemplated legislation with respect to discrimination and at the same time provide amply for railway telephone service. Particular care is taken in every clause to state that the rates to be applied shall be the regular charges of the telephone company to its business subscribers and lessees in similar service, under substantially similar conditions. It takes away nothing that the railways now enjoy, except possibly a few comparatively low rentals for apparatus, which would be more than offset by the substitution of the flat rate for measured service at a few points where the railways, under the present standard telephone agreement, are placed on a measured basis and other subscribers or lessees in similar service under substantially the same conditions, have a flat rate. It permits the use of any apparatus the railway company may elect for use on private lines, not connecting with any public or private branch exchange, or mileage line furnished by the telephone company. It requires the railways to use only apparatus approved by the telephone company when such apparatus is for use on lines likely to be connected with their system. There is no objection to such restriction, if it can be termed a restriction. The standard railway contract, under which most of the railways are now operating, was introduced nine years ago. The new agreement is presented now as originally prepared by the telephone company. Within the current year a new and important feature has appeared. The telegraph company controlling the lines on a majority of the railways is working in harmony with the American Telephone & Telegraph Company; and within the past few months we have noticed that the development of the telegraph and telephone, under such harmonious workings, has been a great benefit to the public generally. It is, therefore, the conclusion of the committee that this association should postpone action on the acceptance of the standard telephone operating agreement until the telegraph and telephone companies have further developed their traffic arrangement, in order that it may be more practicable to judge as to what form of agreement will be best adapted to the service.

This committee consisted of E. P. Griffith (Erie), chairman, L. B. Foley (D., L. & W.), F. G. Sherman, A. B. Taylor (N. Y. C.), J. C. Johnson (Penn.), and N. E. Smith (N. Y., N. H. & H.).

The report was accepted, and the committee was continued, but with the proviso that, in the opinion of the meeting, if any railway company requires an agreement with a telephone company at the present time, it should endeavor to adopt the new agreement for a term of one year experimentally.

The British consul at Salina Cruz, the Pacific terminus of the Tehuantepec Railway, states that the freight carried over the Mexican-Isthmus route in 1909 reached nearly 1,000,000 tons. At Salina Cruz port, the temporary entrance to the inside dock has been filled in, and the whole proposed length of wharfage, built of stone and cement, is now completed and fully equipped with electric cranes, etc., for the rapid loading and discharging of vessels. Another large steel and masonry warehouse has been completed, making six in all, each over 300 ft. long. The Pan-American Railway, connecting with the Tehuantepec line, handled of the 1909-10 Chiapas coffee crop, 8,500,000 lbs., fully 75 per cent. of which went to London and Hamburg. Next season it is estimated there will be a 45 per cent. increase in the crop and a 15 per cent. increase in acreage.

General News Section.

The Texas Midland has increased the pay of brakemen and firemen.

The Louisville & Nashville has made an increase of 6 per cent. in the pay of 4,000 shopmen.

The Baltimore, Ohio & Southwestern has increased the pay of locomotive engineers, to take effect August 1.

The Delaware, Lackawanna & Western, after protracted negotiations, has increased the pay of engineers about 13 per cent.

The dispute between the Virginian Railway and its locomotive engineers concerning wages and conditions of labor has been referred to the government mediators, Messrs. Knapp and Neill.

The striking shopmen of the Rock Island road, referred to in our last issue, returned to work on Saturday last without further conference with or any solicitation from the officers of the company.

In the Federal Court at Pittsburgh, Pa., July 16, suits for violation of the 28-hour law regulating the transportation of live stock were filed against the Pennsylvania lines west of Pittsburgh, 140 violations being charged.

A bridge of the West Side Belt Line on West Carson street, Pittsburgh, Pa., was partly wrecked by dynamite July 15. The McClintic-Marshall Construction Co., the contractor on the work, had employed a few non-union men.

The Public Service Commission of Maryland, which was established this year, is investigating an accident on the Baltimore & Ohio, which occurred in Baltimore last week, where six carpenters at work on a bridge were struck by a train and killed.

The Delaware & Hudson, whose track repairmen have been on a strike for about three weeks, has made to the strikers a second offer. It will pay the foremen the rates that they have demanded, and will pay the laborers \$1.65 a day. The demand of the laborers was for \$1.75. According to the reports, about 1,200 men are on strike.

The Chicago Great Western has bought the Missouri river bridge at Leavenworth, Kan., and adjacent yards from the Leavenworth Bridge & Terminal Co., and beginning August 1 will run its trains to and from Kansas City by way of Leavenworth. The bridge is now used by the Chicago, Burlington & Quincy and the Chicago, Rock Island & Pacific.

Sheet metal workers and coppersmiths employed in the shops of the Missouri, Kansas & Texas, who have been on strike several weeks, have returned to work. They have been granted an increase in wages and improved conditions. Painters employed in the shops at Parsons, Kan., who have been on strike several weeks, have also returned to work, an increase in wages of 2½ cents an hour having been granted.

Henry K. McHarg, until recently president of the Texas Central, who, it is said, has sold his interest in that company, has announced that to every conductor, agent, brakeman and porter on the line he will make a present of a month's salary, and to every employee who has been in the service of the road for 20 years he will give a year's salary. The Texas Central is 267 miles long, extending from Waco northwest to Rotan, and has 30 locomotives.

The newly created Federal Bureau of Mines will include the mine accident and fuel investigations formerly in charge of the Technologic Branch of the United States Geological Survey. For the first year of its existence the work of this bureau will be a continuation and expansion of the work as it was carried on under the direction of the Geological Survey. The law creating the new bureau also provides for a variety of other problems, most of which will be deferred until Congress gives adequate appropriations.

A. R. Mosher, president of the Canadian Brotherhood of Railway Employees, announces that the pay of the men on the Intercolonial has been increased, and that numerous favorable changes have been made in the regulations under which employees work. Some of the men will have their pay increased as much as \$30 a month. These changes are the result of pro-

tracted negotiations with the officers of the road and will take effect as from December 1, 1909. Clerks, checkers, dining car conductors and numerous other classes of employees will have two weeks' vacation annually with pay.

Threatened Strike on the Pennsylvania.

Following the conference last week between General Manager Myers and the representatives of the conductors and trainmen, led by Messrs. Garretson and Lee, as reported in our issue of the 14th, page 145, the leaders of the employees gave out positive statements that the demand which they had made was so serious and important that any suggestion to refer the matter to arbitration would be rejected. Reports were current that a strike would be ordered on the night of July 15, the committee of the employees having held long conferences on that day from which no news was given out; but no strike was ordered. The directors of the road met on that day and adopted a resolution approving the position which had been taken by the executive officers. Following this President McCrea issued a statement in which he said:

"It should be clearly understood that it is not less hours of labor demanded by the conductors and trainmen, but, on the contrary, what they do demand is more money for every hour they work than is paid by other roads in this territory."

Calling attention to the awards made on other railroads in the east, Mr. McCrea says: "These awards have been accepted by all other lines in the eastern territory, and the trainmen state that the rates are considered by them as standard, and while the company has expressed a willingness to go to the 10-hour basis, and at the same rate as other lines have in effect under these arbitration awards, it cannot concede the demand which is now made upon it that it shall pay for 10 hours of work the same amount of wages that it now pays for 11 or 12 hours of work."

"In other words, reduced to a mileage basis, the contention of the men is that 100 miles, or less, should constitute a day, figuring 10 miles to the hour, and that we should pay, for instance, 4.04 cents per mile to conductors in through freight service. On the other hand, the trainmen and conductors, on the award made to them by Messrs. Morrissey and Clark (New York Central case) accepted a mileage basis and 10-hour day, at the rate of 3.63 cents per mile for similar runs. The company feels that the demand of the employees is unfair, inasmuch as it cannot be considered other than a penalty for former liberal treatment. . . ."

Mr. Garretson issued a statement in which he said:

"All the men insist upon is that the code of rules that obtains upon every other road in the country shall be applied on the Pennsylvania without a reduction in the present rate of wages. For years it has been the pride of the Pennsylvania to boast to other roads that they could dictate the wages of their employees and the conditions under which they served, and they were able for years to maintain a semblance of this position by the regular issuance of so-called voluntary increases, and no greater misnomer was ever employed to describe such increases than the word voluntary."

"The student of conditions would invariably notice that such voluntary increases were always granted when the rumble of the feet of an approaching grievance committee was heard. Such increases, invariably given on the percentage basis, widened the difference in rates which existed all over the line between similar classes of service or on different runs on the same portions of the territory, but they served the purpose for which they were devised, namely, to distract the attention of the employees from the fact that the conditions under which they served the company were less remunerative even with a comparatively higher rate of pay than those which obtained on surrounding lines."

On Saturday it was announced that there had been some misunderstanding; that on the lines west of Pittsburgh the company had given the employees substantially what they asked for, and that another conference would be held on Monday at 11 o'clock, though the representatives of the company said that there would be nothing new to offer at that conference. The

company in the meantime was making extensive preparations for a possible strike; temporary lodging quarters were fixed up at the principal terminals and the local authorities were called on at many places to swear in additional policemen. The thousand police in the employ of the company were mobilized, and the men in the large shops of the company were notified that they might be wanted as guards and were asked to say what place they would like to take in case it became necessary to protect the company's property. An officer on the lines west of Pittsburgh told a reporter that it was surprisingly easy to find new trainmen.

On Monday evening the company issued a statement to the effect that the men had accepted the general manager's proposition, which in effect was that "the company would put into effect working conditions, including a minimum day as detailed in the New York Central award, leaving the company's high rates stand, but not increasing them by making the 10-hour day apply to the rates which were made to fit an 11 and 12-hour day." This rather incomplete statement was not much illuminated by the statements given out by the representatives of the employees, but according to the *Philadelphia Press* the result of the conference was as follows:

The terms of settlement have the New York Central award as a basis.
The company is to make a change in the working conditions, changing from the "trip" system of pay to the "mileage" system.
Men now holding high-pay runs are to be protected.
A minimum of 10 hours as a day's work is to be established and the short trip minimum of six hours is to be abolished.
Men are guaranteed 26 days' work a month.
The men assert the settlement was due to the clearing up of misunderstandings.
The company asserts it has made no concessions other than those offered six weeks ago; that what the men wanted was \$4.04 for a minimum day of 10 hours (for freight conductors), and what they got was \$3.63.
The men point to President McCrea's statement issued on Friday as proving that the company misunderstood the demands. They declare the only concession granted by them was on the amount of pay for overtime, in which they accepted 37 cents an hour, instead of 40 cents.

Mr. Garretson went home on Monday and Mr. Lee on Tuesday, leaving the local committees to continue negotiations about details, which, it was said, might take from three days to a week. This seems to indicate that the essential differences are settled, but on what basis cannot be said with certainty until a fuller statement shall be issued by the parties interested.

On the lines west of Pittsburgh the tension seems to have been relieved, but no definite results are given out.

Strike of Trainmen on the Grand Trunk.

The long pending negotiations between the officers of the Grand Trunk and the representatives of the conductors and trainmen of the road were brought suddenly to an end on the evening of Monday, July 18, by a strike which at once stopped freight traffic almost completely throughout the company's lines. On Tuesday through passenger trains were run with very few exceptions, though in many cases behind time, but many local passenger trains were omitted and only a very few freight trains were run. The strike included the Central Vermont through to New London, Conn., and also the trainmen of the Wabash who run over the Grand Trunk tracks between Detroit and St. Thomas. The only place from which a complete cessation of passenger traffic was reported was on the Central Vermont south of Brattleboro. It appears that the company had engaged considerable numbers of new men and an order was at once issued closing the principal shops. President Hays on Tuesday issued a statement in which he said:

"Messrs. Berry and Murdock, with a committee, met the officers of the company and advised that they had received the authority of a large majority of our trainmen to order a strike in the event a settlement was not reached with the company. A general discussion of the situation took place, during which we advised them that we were not in a position to do more than had been offered in our former proposition, giving the men an increase of approximately 18 per cent. with the further promise that they should be given the same standard rate of pay as the Canadian Pacific as soon as the Grand Trunk, through its relation with the Grand Trunk Pacific, is in a position to participate in the higher rates obtaining on traffic in the Northwest. * * * It was explained that if there was any question of indefiniteness as to the date when the standardization was to take effect we would agree that it should be not later than January 1, 1913, or earlier if the Board of Railway Commissioners, upon hearing the facts in the case, should so determine.

"This was not considered satisfactory, and the conference was adjourned until the afternoon, when we were handed the schedule of rates of pay and rules which are practically the eastern standard. To this reply was made that we could do no better than what had already been offered, and we had no further propositions to make.

"Should a strike be ordered we feel confident that it will be found that many of the employees of the company in the train service will disregard such strike and will continue service with the company. We have a large number of applications from other parties desirous of obtaining employment, and shall also recruit largely from our own forces in other departments.

"In the meantime we shall make effective the rules and rates of pay offered the employees. Pending settlement of matters all shops on the system will be closed.

"We have done the best we can, having regard to the interests of the shareholders and of the men themselves. We have offered substantial increases in wages. For instance, we give conductors between Montreal and Portland an increase from \$110 to \$135; between Montreal and Brockville from \$90 to \$140 a month; between Montreal and Toronto from \$110 to \$140, and baggagemen from \$70 to \$85, and brakemen from \$55 to \$60 to \$80. * * * When I put this to the men I said, further, that this was a large increase, but that if they did not think it satisfactory there was still another alternative. I said I was willing, in such case, to go to the arbitration of a board of expert railway men as to whether or not the proposition was fair, and would be willing to abide by their decision.

"Further, I said to the representatives of the men: Suppose a strike is brought on, with all its disturbance of conditions and business; what shall we do eventually but settle it as I have proposed? You will have displaced a great many men, created great losses all over, and got no further ahead. But they refused to listen to this."

Vice-President Murdock, of the Brotherhood of Trainmen, replying to the statement issued by Mr. Hays, said: "This putting up a poor face to the public is about played out. During the last 10 years the company has taken over \$36,000,000 out of revenue and used it on improvements which should have come out of capital account. No other road in the country has done this so far as I know, and we feel that some of those millions should have been directed toward the pockets of the men."

Mr. Murdock went on to name many instances in which the rate offered by the road was lower than that which had been recommended by the Board of Conciliation which had considered the controversy between the road and the men and had made a report a week or two since. He also said that the brotherhoods had proposed a temporary adjustment to last until next January 1, which had not been accepted. When asked as to the power of the brotherhoods, he said that they had \$1,000,000 to keep the strike going, and that striking conductors would receive from the Order of Railway Conductors \$50 a month, and brakemen from the Brotherhood of Railway Trainmen \$35 a month.

The Central Vermont sent an appeal to the federal mediators at Washington, and they—Messrs. Knapp and Neill—sent a telegram to Mr. Murdock, but he replied that there was small hope for settlement and that the men would stop work that evening.

Strike on the Northeastern of England.

Press despatches of July 19 report a strike of employees on the Northeastern Railway of England. No notice had been given. The men say that the strike is a "protest against the generally tyrannical methods of the officers." The strike began at Newcastle, where 3,000 employees left work at 10 o'clock on Monday night.

The Other Side of the Picture.

[Letter in New York Evening Post.]

Let us praise the bridge which carried us safely over. For more than 20 years I held an annual commutation ticket between New York and New Brunswick, N. J. [on the Pennsylvania Railroad, 31 miles], which cost me \$85 for a ride of 60 miles to and fro, at about 25 cents a day, and I have been a passenger on that road for more than 60 years and have never once met with an accident or seen a passenger injured. I will venture to say the

cars are at least as fine as those of any other road out of New York. For more than half a century this annual commutation of \$85 has been maintained and the towns along the road have been built up by it. At last, through the increasing price of material and of labor, and the wages of employees, in order to maintain its reputation for safety and its high state of efficiency, it has been thought necessary for the first time in over 60 years to raise its commutation rates.

New York City Freight Terminals.

A plan for a joint freight terminal in New York City was submitted to Mayor Gaynor last week by Calvin Tomkins, commissioner of docks. The plan provides for a system of yards, docks and storehouses on the west side of Manhattan Island.

The New York Central now has yards near Sixtieth street and Thirtieth street, connected by surface tracks on Eleventh avenue. The new plan is to build a four-track elevated railway along the water front between these yards, and perhaps extending further south. This railway, which will not carry passengers, will have track connection with double-deck piers, provided with freight handling machinery and switching tracks, each pier for the use of one railway company or a group of them. It will also connect with buildings extending from the water front back to Eleventh avenue. The lower floors of these buildings will be provided with tracks, and the upper floors will be used for storage, etc. This scheme would require a classification and L. C. L. yard, which would be at Fortieth street, and would connect with docks for car floats.

Mr. Tomkins proposes a terminal company in which the roads terminating in New York City and on the New Jersey shore of the Hudson river would be stockholders. Each company would pay to the terminal company a proportionate rental. The roads would receive the use of the docks, tracks, etc., and the two lower floors of the terminal buildings, and would themselves arrange for the sub-letting of the upper floors of the buildings, at uniform rates, to industrials. The city would acquire the necessary property and build the elevated railway, docks and buildings, the railway companies guaranteeing that the rental they paid the terminal company would be enough to cover interest and an amortization fund for the bonds by the sale of which the city would get money to pay for the improvements. The cost is estimated at \$100,000,000.

Monorail Accident.

The monorail line which has been under construction in the Borough of the Bronx, New York City, for several months past was last week so far completed that, on Saturday afternoon, the company started out to carry a carload of passengers from Bartow station (on the Harlem River branch of the New York, New Haven & Hartford) to City Island—which is the length of the road—but the car had reached a speed of only 20 miles an hour before it was overturned at a curve, because, apparently, of a new and insecure roadbed or else of insufficient strength in the structure which steadies the cars at the top. The overhead structure did not entirely give way and the car was therefore prevented from falling completely over, but about 20 of the 100 passengers were injured. One of the injured was H. H. Tunis, designer of the road, who was acting as motor-man. The proprietors of the road say that they will soon have it running in good order.

International Association for the Prevention of Smoke.

At the recent convention at Minneapolis, Minn., R. S. Riley, president of the American Ship Windlass Co., Providence, R. I., read an instructive paper on "Taylor Stokers and Steam Boiler Efficiency," in which he showed by numerous illustrations the principles of construction and operation in their relation to increased efficiency.

American Street and Interurban Railway Association.

Convention Bulletin, No. 2, just issued by the secretary-treasurer, H. C. Donecker, gives information regarding hotel rates, locations, reservations, etc., for the convention, to be held at Atlantic City, N. J., October 10-14, 1910.

MEETINGS AND CONVENTIONS.

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass.
 AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Scranton, Pa.
 AMERICAN ASSOCIATION OF GENERAL PASSENGER AND TICKET AGENTS.—C. M. Buft, Boston, Mass.; next meeting, St. Paul, Minn.
 AMERICAN ASSOC. OF LOCAL FREIGHT AGENTS' ASS'N.—G. W. Dennison, Penna. Co., Toledo, Ohio.
 AMERICAN ASS'N OF RAILROAD SUPERINTENDENTS.—O. G. Fetter, Carew Bldg., Cincinnati, Ohio.
 AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 24 Park Place, New York.
 AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago; Oct. 18; Fort Worth, Tex.
 AMERICAN RAILWAY ENGINEERING AND MAINT. OF WAY ASS'N.—E. H. Fritch, Monadnock Bldg., Chicago.
 AMERICAN RAILWAY INDUSTRIAL ASSOCIATION.—G. L. Stewart, St. L. S. W. Ry., St. Louis.
 AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, Old Colony Building, Chicago.
 AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—O. T. Harroun, Bloomington, Ill.
 AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. Edgar Marburg, Univ. of Pa., Philadelphia.
 AMERICAN SOCIETY OF CIVIL ENGINEERS.—C. W. Hunt, 220 W. 57th St., N. Y.; 1st and 3d Wed., except July and August; New York.
 AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 29th St., N. Y.; 2d Tues.; New York.
 AMERICAN STREET AND INTERURBAN RAILWAY ASS'N.—H. C. Donecker, 29 W. 39th St., New York; Oct. 10-14; Atlantic City.
 ASSOCIATION OF AM. RY. ACCOUNTING OFFICERS.—C. G. Phillips, 143 Dearborn St., Chicago.
 ASSOCIATION OF RAILWAY CLAIM AGENTS.—E. H. Hemus, A., T. & S. F., Topeka, Kan.
 ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, 135 Adams St., Chicago; June 19, 1911; Boston.
 ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 24 Park Place, New York.
 BUFFALO TRANSPORTATION CLUB.—J. N. Sells, Buffalo.
 CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk Ry., Montreal, Que.; 1st Tues. in month, except June, July and Aug.; Montreal.
 CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, Montreal, Que.; Thursdays; Montreal.
 CAR FOREMAN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 North 50th Court, Chicago; 2d Monday in month; Chicago.
 CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York; 2d Friday in January, March, May, Sept. and Nov.; Buffalo.
 ENGINEERS' SOCIETY OF PENNSYLVANIA.—E. R. Dasher, Box 704, Harrisburg, Pa.
 ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—E. K. Hiles, 803 Fulton Building, Pittsburgh; 1st and 3d Tuesday; Pittsburgh.
 FREIGHT CLAIM ASSOCIATION.—Walter P. Taylor, Rich., Fred. & Pot. R.R., Richmond, Va.
 GENERAL SUPERINTENDENTS' ASS'N OF CHICAGO.—H. D. Judson, 209 Adams St., Chicago; Wednesday preceding 3d Thursday; Chicago.
 INTERNATIONAL MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York.
 INTERNATIONAL RAILWAY FUEL ASSOCIATION.—D. B. Sebastian, La Salle St. Station, Chicago.
 INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—L. H. Bryan, D. & I. R. Ry., Two Harbors, Minn.
 INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASS'N.—A. L. Woodworth, Lima, Ohio; Aug. 16-18; Detroit, Mich.
 INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, rue de Louvain, 11 Brussels.
 IOWA RAILWAY CLUB.—W. B. Harrison, Union Station, Des Moines, Ia.; 2d Friday in month, except July and August; Des Moines.
 MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, Old Colony Bldg., Chicago.
 NEW ENGLAND RAILROAD CLUB.—G. H. Frazier, 10 Oliver St., Boston, Mass.; 2d Tuesday in month, ex. June, July, Aug. and Sept.; Boston.
 NEW YORK RAILROAD CLUB.—H. D. Vought, 95 Liberty St., New York; 3d Friday in month, except June, July and August; New York.
 NORTH-WEST RAILWAY CLUB.—T. W. Flanagan, Soo Line, Minn.; 1st Tues. after 2d. Mon., ex. June, July, August; St. Paul and Minn.
 NORTHERN RAILWAY CLUB.—C. L. Kennedy, C., M. & St. P., Duluth; 4th Saturday; Duluth, Minn.
 OMAHA RAILWAY CLUB.—A. H. Christiansen, Barker Bldg.; 2d Wed.
 RAILWAY CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City; 3d Friday in month; Kansas City.
 RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, Pittsburgh, Pa., 4th Friday in month, except June, July and August; Pittsburgh.
 RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, 12 North Linden St., Bethlehem, Pa.; annual, Oct. 11; Richmond, Va.
 RAILWAY S'KEEPERS' ASS'N.—J. P. Murphy, Box C., Collinwood, O.
 RICHMOND RAILROAD CLUB.—F. O. Robinson; 2d Monday; Richmond.
 ROADMASTERS' AND MAINTENANCE OF WAY ASS'N.—Walter E. Emery, P. & P. U. Ry., Peoria, Ill.; annual, Sept. 18-16; Chicago.
 ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo.; 2d Friday in month, except June, July and Aug.; St. Louis.
 SOCIETY OF RAILWAY FINANCIAL OFFICERS.—C. Nyquist, La Salle St. Station, Chicago; Oct. 25 and 26; Hotel Chamberlin, Old Point Comfort, Va.
 SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. R. Ry., Montgomery, Ala.; annual, Oct. 20; Atlanta.
 SOUTHERN & SOUTHWESTERN R.R. CLUB.—A. J. Merrill, Prudential Bldg., Atlanta; 8d Thurs., Jan., Mar., July, Sept. and Nov.; Atlanta.
 TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 290 Broadway, New York; last Tuesday in month, except June, July and August; New York.
 TRAIN DESPATCHERS' ASS'N OF AMERICA.—J. F. Mackie, 7042 Stewart Ave., Chicago.
 TRANSPORTATION CLUB OF TOLEDO.—L. G. Macomber, Woolson Spice Co., Toledo.
 TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo; annual meeting; Aug. 16-19; Niagara Falls, Ont.
 WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg; 2d Monday, except June, July and August; Winnipeg.
 WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, Monadnock Bldg., Chicago; Wednesdays, except July and August; Chicago.

Traffic News.

Traveling lecturers who will instruct farmers how to raise hogs are now going over the lines of the St. Louis Southwestern in Texas.

The Legislature of Texas has just convened in a special session and the governor of the state proposes to lay before it a proposal to reduce passenger fares generally from three cents a mile to two cents.

The Attorney-General of Indiana has filed with the Interstate Commerce Commission a petition to be allowed to intervene in the suit of the State of Oklahoma to compel a reduction in the rates for upper berths in sleeping cars. The Indiana petition presents a long list of routes on which the sum of \$1 for upper berths is declared to be a reasonable rate.

Shippers in the North River territory are preparing to present claims aggregating \$500,000 for over-charges on shipments made during the past two months on the tariffs which have lately been declared by the Interstate Commerce Commission to be excessive. The rates referred to are those which were adjudicated in the Burnham-Hanna-Munger act in which the decision of the commission was sustained by the supreme court.

The National Industrial Traffic League met in Chicago on July 12, and, on the suggestion of H. C. Barlow, traffic director of the Chicago Association of Commerce, decided to make an investigation of the effect on freight rates of the ownership by railways of water transportation lines on the Great Lakes and elsewhere. Mr. Barlow expressed the belief that the ownership of the boat lines by the railways is eliminating water competition and that to this is due the fact that the margins between the all-rail and the lake-and-rail rates between Chicago and the East are being reduced.

Representatives of commuters residing on the line of the West Shore Railroad in New Jersey have complained to the Interstate Commerce Commission that the principal defense made by the New Jersey railways, when questioned last week at Washington as to the increases which have been made in commutation rates, does not apply on the West Shore. This defense was that very large sums of money have been expended in improving the railways in order to enable them to accommodate the suburban traffic. On the West Shore very few improvements have been made. Moreover, the suburban territory on the West Shore is "peculiarly dedicated to the homes of people of fixed and small incomes."

The New York, New Haven & Hartford announces that after July 23 passengers riding on mileage tickets to or from New York will be required to surrender two extra coupons, this addition of four cents being made to provide for a terminal charge. This terminal charge, presumably added because of the increased expense of maintaining and operating the Grand Central terminal, appears to have been the reason for an increase of five cents in single trip tickets which was made a few weeks since. The changes in the column of distances in the time-tables which were made about that time and which were quickly corrected, appear to have been due to this same cause, or, rather, due to the blunder of someone in assuming that constructive miles, introduced for the purpose of computing rates, were the same as actual miles.

The Interstate Commerce Commission has issued the following as a result of conferences with traffic managers of all roads east of Chicago and north of the Potomac: "It being understood that the commission would exercise its authority under the new law and suspend all general and important rate advances made for the purpose of increasing revenue, the principal carriers in official classifications territory through a committee appointed for that purpose proposed to-day to voluntarily postpone the effective date of such advanced rates until November 1, and arrangement to that effect was made after a conference with the commission. This will not delay investigation and decision as to the reasonableness of the proposed advances, but will obviate the necessity at this time for numerous suspension orders which otherwise would be made."

This week's bulletin of rate changes issued by the New York State Public Service Commission, Second district, shows an unusually large number of advances in freight rates to take effect August 10th to 15th. An advance in carload rates of one cent per 100 lbs. is generally made on grain and

products between points in New York by the roads in the New York Central and Erie systems, also by the Lehigh Valley, the Lackawanna, the Buffalo, Rochester & Pittsburgh, and many others. Rates on numerous low-grade commodities are advanced in amounts ranging from a quarter of a cent to two cents per 100 lbs. The taking effect of some of these rates, as well as rates published to take effect August first, may be suspended [by the roads] on account of the relation which they bear to rates applying to interstate commerce and published to take effect at the same time, which rates have been indefinitely suspended by the Interstate Commerce Commission pending investigation. The Public Service Commission is not empowered, as is the Interstate Commission, to suspend rate advances.

A conference was held in Chicago last week by representatives of the Interstate Commerce Commission and officers of the transcontinental railways to consider what method shall be used in checking the accounts of these roads so as to determine what will be the effect on their revenues of the reductions in rates which the commission outlined in its recent opinions in the transcontinental freight rate cases. The commission was represented by John H. Marble, one of its attorneys; J. M. Jones, chief of the bureau of tariffs, and Charles A. Lutz, chief examiner of accounts. The commission in its opinion suggested that the estimate of how much the railways' earnings should be reduced should be based on a comparison of their actual earnings from traffic in the months of July, August and September, with what their earnings would have been under the rates which it suggested. Representatives of the railways pointed out that this method would be unsatisfactory because, as shippers expect reductions in rates to be made October 1, they naturally will ship as little freight as possible until the lower rates go into effect. It was suggested that it would be better to compute the probable reduction in earnings on the basis of freight already carried in past months. It was finally decided to leave to the commission the selection of the months whose business shall be used as the basis of computation.

The Shippers and Receivers' Association of Cincinnati has applied to the federal court for a mandatory injunction to compel the Interstate Commerce Commission to annul its recent order in the case of rates from Cincinnati south, reopen the hearing and give another decision. The rates to which objection is made were to take effect July 15. One of the questions which plaintiffs desire to settle is that of the right of the commission to consider the earnings of a group of roads when deciding whether or not the rates on a single road in the group are excessive. Rates from the Middle West to the Southeast as compared with the rates from the seaboard to the same territory have been a bone of contention for 25 years, Chicago and St. Louis shippers claiming to lose great volumes of business annually on account of the discrimination. The bulk of the business between Cincinnati and Chattanooga is done by the Cincinnati, New Orleans & Texas Pacific, which, it was shown, earns \$26,000 per mile of road. This fact was cited by the shippers to show that the rates could be reduced materially without endangering a fair return to the road. The commission, in its decision, admitted that the road in question would not suffer from the reduction in rates asked for by the complainants, but it insisted that if such reduction were to be made it would be unfair to the other roads which were not enjoying such large earnings and which were roundabout routes between the same points. It is insisted by the shippers that the commission did not have the power to take this into consideration.

H. P. Hood & Sons, of Boston, who, with other firms, have protested to the Interstate Commerce Commission against a large increase in the rates on milk from northern New England to Boston, over the Boston & Maine, present a statement to the effect that they have enjoyed the same rates constantly since 1856. These are based on a price of \$100 a car a mile a year. In the beginning, the firm supplied the cars itself in order to develop the business, spending about \$15,000 for each carload developed; and it continues to furnish the cars. On the Boston & Maine the firm now has 21 car lines. Besides furnishing the cars, the Messrs. Hood have built the terminal depots, icing houses and creameries. The other roads have adopted a system like that of the Boston & Maine, and it is claimed that the farmers receive for their milk higher prices than are paid elsewhere in the country, except at a few points in California and

in the southern states; while at the same time the retail price of milk has been lower in Boston than in other large cities. It is declared that the system has been profitable to the railway companies. The proposed new rates average about 50 per cent. higher than the old. The Hood company declares that in the year ending Feb. 1, 1910, the average profit on milk sold at retail was 2.5 mills per quart, and the total profit of the company was less than 1.1 per cent. of the aggregate value of

authority to take leases of certain lines in New Hampshire agreed that rates on the leased lines should not be raised above those in existence on August 1, 1883.

Car Surpluses and Shortages.

Arthur Hale, chairman of the committee on relations between railways of the American Railway Association, in presenting

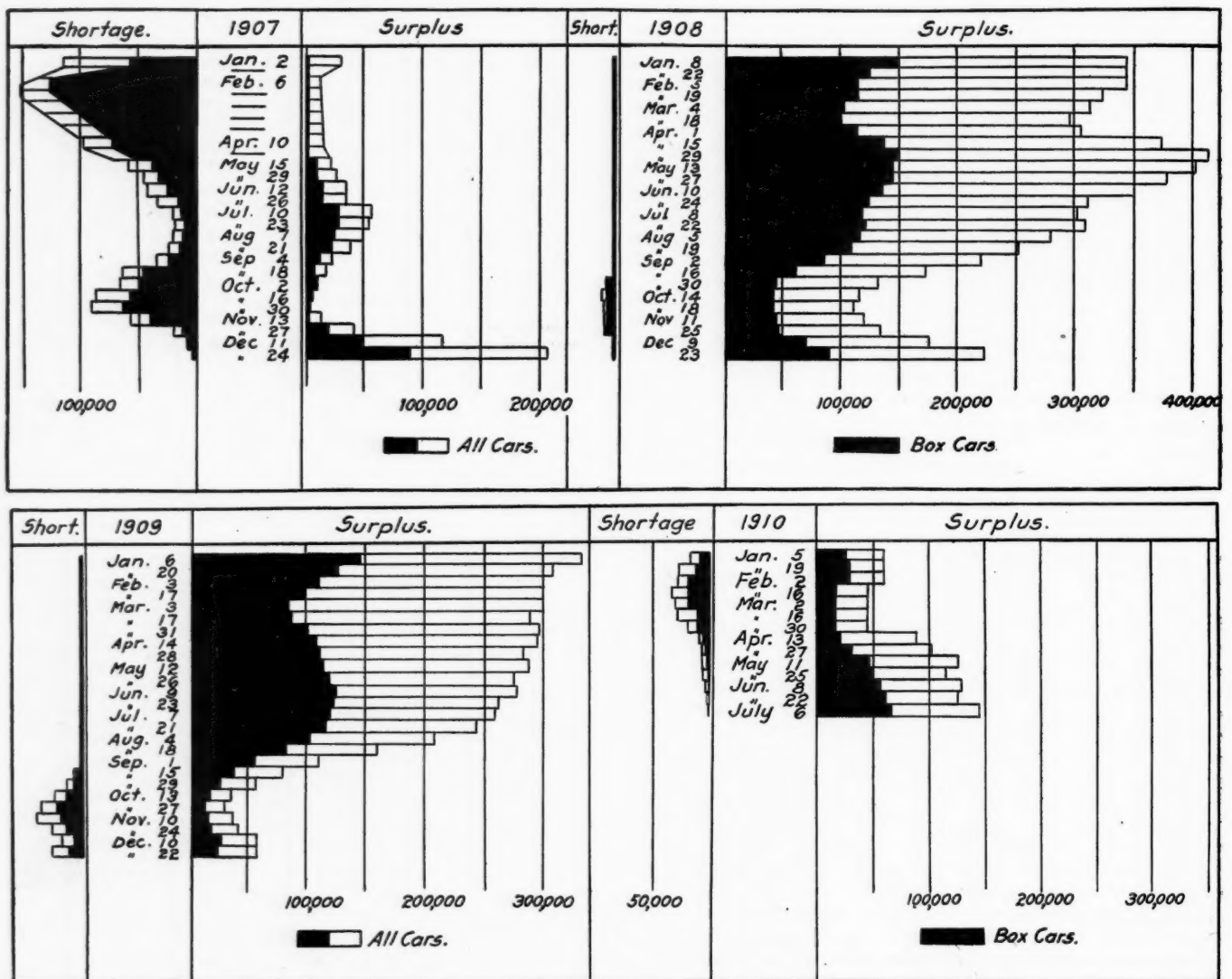
CAR SURPLUSES AND SHORTAGES.												
Date.		No. of roads.	Surpluses				Shortages					
			Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.	Box.	Flat.	Coal, gondola and hopper.	Other kinds.	Total.
Group *1.—	July 6, 1910.....	8	126	7	917	93	1,143	58	154	0	0	212
"	2.—July 6, 1910.....	23	11,891	140	15,205	18,466	40,702	7	1	3	3	14
"	3.—July 6, 1910.....	24	20,911	598	8,519	3,804	33,332	0	115	0	193	308
"	4.—July 6, 1910.....	10	2,956	8	415	1,877	5,251	27	160	0	0	187
"	5.—July 6, 1910.....	20	2,977	216	1,670	1,265	6,128	0	25	6	0	31
"	6.—July 6, 1910.....	20	7,294	676	2,273	6,029	16,272	16	2	1	100	119
"	7.—July 6, 1910.....	3	1,079	128	106	627	1,940	0	0	0	0	0
"	8.—July 6, 1910.....	12	7,388	343	4,659	3,127	15,467	0	1	8	2	11
"	9.—July 6, 1910.....	12	1,880	347	186	931	3,344	0	0	2	0	2
"	10.—July 6, 1910.....	18	5,647	1,088	2,810	6,433	15,928	10	0	0	0	10
"	11.—July 6, 1910.....	6	2,979	346	15	978	3,417	0	55	0	10	65
Grand total		156	65,078	3,841	36,775	38,130	143,824	118	513	20	308	959

*Group 1 is composed of New England lines; Group 2—New York, New Jersey, Delaware, Maryland, and Eastern Pennsylvania lines; Group 3—Ohio, Indiana, Michigan, and Western Pennsylvania lines; Group 4—West Virginia, Virginia, and North and South Carolina lines; Group 5—Kentucky, Tennessee, Mississippi, Alabama, Georgia and Florida lines; Group 6—Iowa, Illinois, Wisconsin, Minnesota, and North and South Dakota lines; Group 7—Montana, Wyoming and Nebraska lines; Group 8—Kansas, Colorado, Missouri, Arkansas and Oklahoma lines; Group 9—Texas, Louisiana and New Mexico lines; Group 10—Oregon, Idaho, California and Arizona lines; Group 11—Canadian lines.

the milk (two figures which to be consistent need to be explained). In the computation here presented, the cost of transportation averages 4 cents on each can of 8½ quarts. The petition further states that the Boston & Maine, in securing

statistical bulletin No. 75, giving a summary of car shortages and surpluses by groups from February 17, 1909, to July 6, 1910, says:

"There was a reaction in the car situation since the last bul-



Car Surpluses and Shortages in 1907, 1908, 1909 and 1910.

letin, and the surplus shows an increase of 18,180 cars, bringing the total to 143,824, the largest figure since August, 1909. Of this increase, 5,467 are box cars, 8,013 coal and gondola and 4,096 miscellaneous. In box cars the increase is quite well distributed between groups 3 (Central), 4 (North Atlantic), 10 (Pacific) and 11 (Canadian). The increase in coal is almost entirely on the soft coal roads lying in group 2 (Eastern).

"The slight shortages that have been reported for several periods are reduced to a total of 959, which are so scattered as to be of no importance."

The table gives surpluses and shortages by groups for the latest period covered by the report, and the charts show total surpluses and shortages in 1907, 1908, 1909 and 1910.

Drummers' Deceitful Devices.

Gov. Judson Harmon's veto of the "baggage bill," which was recently passed by the Ohio legislature, a measure designed to allow the transportation of freight as personal baggage on passenger trains, has called attention to the attempts to enact similar bills in other legislatures and in Congress. The fact that such laws would greatly delay passenger trains through forcing them to do freight train business is chiefly responsible for the opposition. The support for the measure comes from commercial travelers, who would have the privilege of shipping unlimited quantities of goods, to be delivered on sale, at express speed at extremely low rates. In addition to the "baggage bills" presented in state legislatures no less than four were introduced in Congress at the last session. They are now hibernating until efforts for their passage can be renewed when Congress meets again. There are many ingenious schemes resorted to to ship merchandise free as baggage. It is no rare thing, for instance, to hear someone asking in a crowded waiting room if there is anyone going to a given point without baggage. When such a person is found the inquirer seeks to borrow his ticket to check 150 lbs. of freight.—*Pittsburgh Times*.

St. Louis Railway Club.

The St. Louis Railway Club will hold its annual outing and basket picnic at Union, Mo., on Saturday, July 23. The Rock Island has tendered a complimentary train for the use of the members and their families. The entertainment features are to include music, dancing, games, bathing and fishing, and the citizens of Union have invited the members to participate in the grand barbecue and band festival which is to be held on that day.

INTERSTATE COMMERCE COMMISSION.

Coal Rate Reduced.

League of Southern Idaho Commercial Clubs v. Oregon Short Line et al. Opinion by Commissioner Cockrell.

Carload rates on coal from Rock Springs, Wyo., etc., to certain Idaho points found unreasonable and lower rates prescribed. (18 I. C. C., 562.)

Rates on Petroleum Reduced.

National Petroleum Association et al. v. Missouri Pacific et al. National Refining Co. v. Missouri Pacific. Opinion by Commissioner Lane.

The rates on petroleum and its products from Coffeyville, Kan., to Memphis, Tenn., found unreasonable and lower rates prescribed. (18 I. C. C., 593.)

Rates on Phosphate Rock.

Bash Fertilizer Co. v. Wabash et al. Opinion by Commissioner Cockrell.

The complainant, manufacturing commercial fertilizers at Prairie Switch, Ind., asks lower rates on acid phosphate from Baltimore, Md., Buffalo, N. Y., Washington Court House, Ohio, and the Tennessee fields, it is held that lower rates should be established from Buffalo and Washington Court House.

Complainant asks for the same rates on phosphate rock and acid phosphate, for transit privileges, and for reparation, but it is held that acid phosphate is of higher grade than the crude rock, and while the carriers may rate them together the commis-

sion is not prepared to order such rating and complainant is not entitled either to transit privileges or to reparation. (18 I. C. C., 522.)

Substitution of Tonnage at Transit Points.

Henderson & Barkdull v. St. Louis, Iron Mountain & Southern. Opinion by Commissioner Cockrell.

Complainants' shipments of cotton, uncompressed, were destroyed by fire after arrival at the compress; and petition seeks either reparation of the amount paid on the inbound expense bills or an order requiring defendant to honor said expense bills for a reasonable time on new cotton for outbound movement. Complaint dismissed. (18 I. C. C., 514.)

Rates on Iron and Steel.

Highland Iron & Steel Co. v. Vandalia Railroad et al. Opinion by Commissioner Lane.

Rates on various classes of iron and steel from Terre Haute, Ind., to Louisville, Ky., Cincinnati, Ohio, and Dayton not found unreasonable. (18 I. C. C., 601.)

National Rolling Mill Co. v. Baltimore & Ohio Southwestern. Opinion by the commission.

Rates on bar iron from Vincennes, Ind., to Louisville, Ky., not unreasonable. (18 I. C. C., 604.)

Delay Due to Steamship Connection.

George Borgfeldt & Company v. Southern Pacific Company et al. Opinion by Chairman Knapp.

Shipments forwarded from Hamburg on through bills of lading prepaid to California terminals. The ship in which the consignments were loaded sailed from Hamburg July 4, 1908. When the goods arrived in New Orleans the through rate had been canceled, leaving in effect a rate from New Orleans to San Francisco higher than the proportion of the through rate formerly assessed by the defendants. Defendants collected from complainant the additional charges, although the delay in the ocean transportation was due to a breakdown of the machinery of their own ocean connection. It is held that under rule No. 111 of conference rulings bulletin No. 4 the complaint must be dismissed. (18 I. C. C., 552.)

Reparation Denied.

Wilburine Oil Works, Limited, v. Pennsylvania Railroad et al. Opinion by Chairman Knapp.

Reparation for misrouting where shipper gives instructions to forward the goods via the route taken denied. (18 I. C. C., 548.)

Pankey & Holmes v. Central New England et al. Opinion by Commissioner Clements.

Rates on apples from Mount Ross, N. Y., to Birmingham, Ala., via the Seaboard Despatch, are not found unreasonable. (18 I. C. C., 578.)

Quammen & Austad Lumber Co. v. Chicago Great Western et al. Opinion by Commissioner Lane.

Again the commission holds that the mere fact that a lower rate is now charged does not warrant finding the former higher rate unreasonable. (18 I. C. C., 599.)

Rates from Concentrating Points.

St. Paul Board of Trade et al. v. Minneapolis, St. Paul & Sault Ste. Marie. Opinion by Commissioner Harlan.

The defendant maintains two proportional rates out of Minnesota concentrating markets to Manistique, Mich., on butter and eggs destined to eastern points, one of 20 cents and one of 40 cents per 100 lbs., the former being limited in its application to butter and eggs that have reached the concentrating points over defendant's line and the 40-cent rate being an open rate applicable on butter and eggs reaching those markets over other lines. The defendant may make a distinction in its rates between shipments originating at the concentrating point so far as its line is concerned and traffic on which it has had a haul into the concentrating points; but it may do this only under proper tariff provisions connecting the inbound with the outbound movements, and then only when the inbound movement to the concentrating point proceeds under rates on file with this commission. (19 I. C. C., 285.)

REVENUES AND EXPENSES OF RAILWAYS.

MONTH OF MAY, 1910.
(See also issues July 8 and 15.)

Mileage operated at end of period.	Name of road.	Operating revenues			Maintenance of way and structures, equipment.		Operating expenses		Net operating revenue (or deficit).	Outside operations, net.	Taxes.	Operating income (or loss).	Increase (or decrease) in income last year.
		Total.	Freight.	Passenger.	Total.	Inc. misc.	Traffic.	Transportation.					
309	Alabama Great Southern	\$255,920	\$89,187	\$379,508	\$73,632	\$26,797	\$11,478	\$14,015	\$255,772	\$9,115	\$9,115	\$11,522	\$86,311
546*	Bangor & Aroostook	174,080	66,058	231,980	38,419	26,797	2,613	73,439	151,173	9,905	1,500	79,307	19,892
201	Bessemer & Lake Erie	761,208	23,172	784,000	130,195	79,490	7,949	181,986	397,765	6,928	6,000	391,765	69,308
1,916	Central of Georgia	515,313	236,664	380,791	193,153	196,377	29,108	303,430	760,435	38,487	18,457	54,990	96,734
269	Chicago & Erie	299,982	50,961	350,791	41,155	38,079	17,022	177,603	388,195	9,264	13,038	31,658	18,173
329	Chicago, Indiana & Southern	244,215	20,203	273,218	42,911	50,367	8,951	98,591	208,666	6,547	13,500	50,216	9,920
285	Chicago, Cincinnati & Louisville	96,298	25,979	129,625	17,945	24,090	7,341	62,614	117,733	5,732	8,593	16,160	22,475
486†	Chicago, Rock Island & Gulf	658,299	113,880	815,992	82,816	37,774	7,997	89,704	1,589,963	8,174	20,000	56,063	49,488
337	Cincinnati, New Orleans & Texas Pacific	331,227	31,320	362,547	31,290	38,452	19,532	280,275	350,121	574	20,000	330,695	94,822
337	Colorado Midland	1,603,300	117,600	1,760,886	308,095	242,096	1,686	415,490	1,067,503	10,136	78,648	600,853	154,866
168	Duluth & Iron Range	184,105	37,099	221,204	104,912	104,139	8,022	215,694	224,000	6,176	18,000	1,376,149	631,108
293	Duluth, Missabe & Northern	196,192	85,090	281,282	72,476	68,220	3,209	105,017	74,112	129	2,825	218,050	3,423
609	Duluth, South Shore & Atlantic	776,499	77,499	853,998	168,220	168,220	4,309	255,155	535,999	13,145	22,450	510,449	101,772
781	Elgin, Joliet & Terre Haute	135,154	31,250	166,404	24,885	24,885	5,150	63,421	123,466	5,852	13,214	63,404	12,714
454	Fort Worth & Denver City	116,763	14,407	131,170	50,884	67,483	6,421	131,650	271,411	14,972	13,639	130,062	42,033
336	Grand Trunk Western	331,146	155,761	486,907	116,761	71,810	17,997	197,165	130,505	8,287	8,062	26,140	43,604
336	Hocking Valley	155,761	155,761	311,522	116,761	71,810	17,997	197,165	130,505	8,287	8,062	26,140	43,604
350	Houston & Texas Central	554,535	69,185	623,720	60,217	62,083	13,949	191,958	410,192	12,218	29,190	73,504	125,670
789	International & Great Northern	264,565	108,418	372,983	60,217	62,083	13,949	191,958	410,192	12,218	29,190	73,504	125,670
1,159	Kanawha & Michigan	478,882	151,734	630,616	115,539	90,929	17,729	327,878	573,343	68,035	17,079	241,049	125,670
175	Louisiana Ry. & Nav. Co.	210,900	27,570	238,470	57,048	57,048	1,716	58,292	170,402	7,556	20,500	73,046	101,772
350	New Orleans, Mobile & Chicago	95,953	17,317	113,270	23,482	14,028	5,028	48,675	69,903	9,541	4,250	25,667	27,067
403	Northwestern Pacific	104,142	26,846	130,988	18,021	11,911	2,988	48,351	85,822	9,541	3,543	51,927	15,074
376	Oregon R.R. & Nav. Co.	889,676	361,674	1,251,350	102,658	120,815	3,679	98,095	193,799	9,072	11,515	99,561	15,231
1,476†	Philadelphia & Reading	201,276	62,574	263,850	42,076	42,076	5,987	112,093	209,022	5,034	75,199	1,681,078	508,627
351	St. Louis, Brownsville & Mexico	106,669	45,541	152,210	33,734	33,734	2,749	60,481	126,715	9,286	3,500	31,229	17,173
494‡	St. Louis, Brownsville & Mexico	106,669	45,541	152,210	33,734	33,734	2,749	60,481	126,715	9,286	3,500	31,229	17,173
727	San Antonio & Aransas Pass	213,887	73,250	287,137	62,939	62,939	4,975	118,959	248,259	56,229	10,500	46,322	846
679‡	San Antonio & Aransas Pass	213,887	73,250	287,137	62,939	62,939	4,975	118,959	248,259	56,229	10,500	46,322	846
6,076‡	Southern Pacific Co.	2,853,760	826,173	3,680,000	1,029,619	1,029,619	14,842	2,157,572	4,499,245	14,506	360,268	3,444,799	515,841
444	Toledo & Ohio Central	358,015	46,554	404,569	96,103	96,103	6,044	124,186	206,111	7,313	13,000	145,057	62,293
444	Virginian Ry.	164,819	18,401	183,220	32,887	31,742	4,870	64,003	132,063	7,561	13,000	45,823	8,604
356	West Jersey & Seashore	141,024	307,913	448,937	55,441	10,074	18,743	189,743	122,281	5,322	20,937	96,922	33,576
458	Wheeling & Lake Erie	521,146	45,250	566,396	85,307	104,597	8,150	191,186	403,448	14,203	20,937	177,127	33,576
ELEVEN MONTHS OF FISCAL YEAR, 1910.													
309	Alabama Great Southern	\$2,547,614	\$964,385	\$3,550,055	\$456,492	\$895,122	\$103,593	\$1,141,934	\$2,633,759	\$99,018	\$135,026	\$1,083,620	\$215,699
546*	Bangor & Aroostook	2,038,624	588,389	2,763,501	406,963	320,205	80,858	771,751	1,635,866	116,089	16,500	1,111,135	179,349
201	Bessemer & Lake Erie	7,478,880	294,540	8,070,027	666,436	1,190,888	81,239	3,395,058	7,476,657	104,382	99,210	3,126,314	1,115,429
1,916	Central of Georgia	5,153,313	236,664	5,389,977	1,711,777	1,848,815	388,371	3,895,047	4,527,447	452,047	49,414	3,012,020	302,093
269	Chicago & Erie	299,982	50,961	350,791	41,155	38,079	17,022	177,603	388,195	9,264	13,038	803,872	355,845
329	Chicago, Indiana & Southern	244,215	20,203	273,218	42,911	50,367	8,951	98,591	208,666	6,547	13,500	871,463	400,177
285	Chicago, Cincinnati & Louisville	96,298	25,979	129,625	17,945	24,090	7,341	62,614	117,733	5,732	8,593	53,596	116,062
486†	Chicago, Rock Island & Gulf	658,299	113,880	815,992	82,816	37,774	7,997	89,704	1,589,963	8,174	20,000	2,866,042	720,479
337	Cincinnati, New Orleans & Texas Pacific	331,227	31,320	362,547	31,290	38,452	19,532	280,275	350,121	574	20,000	2,866,042	720,479
337	Colorado Midland	1,603,300	117,600	1,760,886	308,095	242,096	1,686	415,490	1,067,503	10,136	78,648	4,725,026	1,491,068
168	Duluth & Iron Range	184,105	37,099	221,204	104,912	104,139	8,022	215,694	224,000	6,176	18,000	4,725,026	1,491,068
293	Duluth, Missabe & Northern	196,192	85,090	281,282	72,476	68,220	3,209	105,017	74,112	129	2,825	4,725,026	1,491,068
609	Duluth, South Shore & Atlantic	776,499	77,499	853,998	168,220	168,220	4,309	255,155	535,999	13,145	22,450	4,725,026	1,491,068
781	Elgin, Joliet & Terre Haute	135,154	31,250	166,404	24,885	24,885	5,150	63,421	123,466	5,852	13,214	4,725,026	1,491,068
454	Fort Worth & Denver City	116,763	14,407	131,170	50,884	67,483	6,421	131,650	271,411	14,972	13,639	4,725,026	1,491,068
336	Grand Trunk Western	331,146	155,761	486,907	116,761	71,810	17,997	197,165	130,505	8,287	8,062	4,725,026	1,491,068
336	Hocking Valley	155,761	155,761	311,522	116,761	71,810	17,997	197,165	130,505	8,287	8,062	4,725,026	1,491,068
350	Houston & Texas Central	554,535	69,185	623,720	60,217	62,083	13,949	191,958	410,192	12,218	29,190	4,725,026	1,491,068
789	International & Great Northern	264,565	108,418	372,983	60,217	62,083	13,949	191,958	410,192	12,218	29,190	4,725,026	1,491,068
1,159	Kanawha & Michigan	478,882	151,734	630,616	115,539	90,929	17,729	327,878	573,343	68,035	17,079	4,725,026	1,491,068
175	Louisiana Ry. & Nav. Co.	210,900	27,570	238,470	57,048	57,048	1,716	58,292	170,402	7,556	20,500	4,725,026	1,491,068
350	New Orleans, Mobile & Chicago	95,953	17,317	113,270	23,482	14,028	5,028	48,675	69,903	9,541	4,250	4,725,026	1,491,068
403	Northwestern Pacific	104,142	26,846	130,988	18,021	11,911	2,988	48,351	85,822	9,541	3,543	4,725,026	1,491,068
376	Oregon R.R. & Nav. Co.	889,676	361,674	1,251,350	102,658	120,815	3,679	98,095	193,799	9,072	11,515	4,725,026	1,491,068
1,476†	Philadelphia & Reading	201,276	62,574	263,850	42,076	42,076	5,987	112,093	209,022	5,034	75,199	4,725,026	1,491,068
351	St. Louis, Brownsville & Mexico	106,669	45,541	152,210	33,734	33,734	2,749	60,481	126,715	9,286	3,500	4,725,026	1,491,068
494‡	St. Louis, Brownsville & Mexico	106,669	45,541	152,210	33,734	33,734	2,749	60,481	126,715	9,286	3,500	4,725,026	1,491,068
727	San Antonio & Aransas Pass	213,887	73,250	287,137	62,939	62,939	4,975	118,959	248,259	56,229	10,500	4,725,026	1,491,068
6,076‡	Southern Pacific Co.	2,853,760	826,173	3,680,000	1,029,619	1,029,619	14,842	2,157,572	4,499,245	14,506	360,268	4,725,026	1,491,068
444	Toledo & Ohio Central	358,015	46,554	404,569	96,103	96,103	6,044	124,186	206,111	7,313	13,000	4,725,026	1,491,068
444	Virginian Ry.	164,819	18,401	183,220	32,887	31,742	4,870	64,003	132,063	7,561	13,000	4,725,026	1,491,068
356	West Jersey & Seashore	141,024	307,913	448,937	55,441	10,074	18,743	189,743	122,281	5,322	20,937	4,725,026	1,491,068
458	Wheeling & Lake Erie	521,146	45,250	566,396	85,307	104,597	8,150	191,186	403,448	14,203	20,937	4,725,026	1,491,068
Mileage operated on May 31, 1909, 515 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles.													

* Mileage operated on May 31, 1909, 515 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles. † Mileage operated on May 31, 1909, 515 miles. ‡ Mileage operated on May 31, 1909, 454 miles.

Question of to Whom Reparation Is Due.

Sunnyside Coal Mining Co. et al. v. Denver & Rio Grande et al. Opinion by Commissioner Clements.

Reparation is due to the person who has been required to pay the excessive charge as the price of transportation, and who is the true owner of the property transported during the period of transportation. In this case it is admitted that none of the complainants paid the freight charges on which they seek reparation. The claim for reparation is therefore denied. (19 I. C. C., 20.)

Yellow Pine Lumber Case.

Louisiana Central Lumber Co. et al. v. Chicago, Burlington & Quincy et al.

The commission decides that the rates on yellow pine lumber and products from points in Louisiana, Texas, Arkansas and Missouri to points reached by the Chicago, Burlington & Quincy and the Union Pacific in western Nebraska are unreasonable. Reparation will be awarded on all shipments to points reached by the lines of the defendants in Kansas, Colorado and Wyoming during the period while the higher rates were in effect. Reparation will also be awarded on all shipments to western Nebraska points the rates which are herein found to have been unreasonable.

Wheat and Flour Rates from Detroit.

David Stott v. Michigan Central et al. Opinion by Commissioner Prouty.

Complainant, a miller at Detroit, Mich., brings in wheat by water from Duluth, grinds it at Detroit, and ships the product by all rail to various eastern destinations. In the complaint he asks defendants to apply from Detroit to these eastern destinations a rate on wheat which has come to Detroit by water which is less than the rate which they apply on the flour which the complainant has ground from similar wheat, and also that defendants grant to millers located on their lines in case of this wheat the milling-in-transit privilege.

There is very great force in the contention of the complainant, and unless that contention is sustained it is evident that mills located at the end of the water and the beginning of rail transportation cannot grind in competition with those upon either side. In *Hecker, Jones, Jewell Milling Co. v. B. & O. R. R. Co.*, 14 I. C. C., 356, the commission held that if carriers leading to the seaboard granted a milling-in-transit rate to flour for export they should accord the same rate upon wheat brought to the port of export and there ground for export. This order was sustained by the circuit court of the United States upon proceedings brought by the carriers to enjoin its enforcement.

We have here the reverse of that proposition. The Hecker-Jones mill was situated at the end of the rail haul and at the beginning of the water haul. The mill of the complainant is located at the end of the water and the beginning of the rail haul, but in each case the discrimination is the same, and the reason which calls for the allowance of a milling-in-transit rate in that case applies with equal force to the one before us.

While, however, the two cases cannot be distinguished in principle, there are very important practical differences. In the *Hecker-Jones* case it was possible to keep the wheat for export entirely separate from that ground for domestic use. At the present time under that order the Hecker-Jones Company in fact keeps the grain for export milling and the product of that grain entirely distinct from that which is used for home consumption. In the present case the wheat which the complainant brings in by water is mingled with that which he brings in by rail, the two being ground together and therefore inextricably blended in the barrel of flour. The method of the complainant's business is such that it is impossible to distinguish the flour produced from water-borne wheat and that produced from rail wheat, and it is therefore impossible to deal with this case in the same manner in which we did the *Hecker-Jones* case. Complaint dismissed. (18 I. C. C., 582.)

Reparation Awarded.

Texas Grain & Elevator Co. v. Chicago, Rock Island & Pacific et al. Opinion by Chairman Knapp.

Rate on corn in the shuck found unreasonable. (18 I. C. C., 580.)

William Cameron & Co., Inc., v. Texas & Pacific et al. Opinion by Commissioner Prouty.

Carload of lumber was misrouted by the Texas & Pacific, the original carrier. (18 I. C. C., 560.)

Winters Metallic Paint Co. v. Chicago, Milwaukee & St. Paul et al. Opinion by Commissioner Lane.

Rates on ground iron ore from Iron Ridge Junction, Wis., to Spokane, Wash., and Denver, Colo., are found unreasonable. (18 I. C. C., 596.)

John J. Sherry v. Southern Pacific et al. Opinion by Chairman Knapp.

Overcharge on a carload of lumber shipped from Oregon City, Ore., to Cripple Creek, Colo., due to unreasonable joint rate. (18 I. C. C., 554.)

Lebanon Paper Co. v. Elgin, Joliet & Eastern et al. Opinion by Commissioner Lane.

Unreasonable charges were collected because of misrouting of a carload shipment from Chicago Heights, Ill., to Lebanon, Ore. (18 I. C. C., 591.)

Sunderland Brothers Co. v. St. Louis & San Francisco et al. Opinion by Chairman Knapp.

Minimum weight assessed on complainant's shipments of lime from Ash Grove, Mo., to Pine Bluffs, Wyo., and Laramie found excessive, and lower minimum weight prescribed for the future. (18 I. C. C., 545.)

Wilson Produce Co. v. Pennsylvania Railroad. Opinion by Commissioner Prouty.

One carload of watermelons from Lowell, Fla., was consigned to Pittsburgh, Pa., and diverted en route at Altoona. The diversion should have been made without additional charge. (19 I. C. C., 1.)

Stacy Mercantile Co. v. Minneapolis, St. Paul & Sault Ste. Marie et al. Opinion by Chairman Knapp.

There was discrimination in rates against complainant's shipment of apples from points in Washington to points in North Dakota, as at the time of shipment a lower rate was in effect from other points similarly situated in Washington. (18 I. C. C., 550.)

Henderson Elevator Co. v. Louisville & Nashville. Opinion by Chairman Knapp.

The defendant's failure to establish a proportional rate from Enfield, Ill., to Henderson, Ky., upon grain originating at points beyond Enfield and reshipped from Henderson to southeastern destinations, while maintaining such proportional rates, less than its local rates, from all junction points on its St. Louis division other than Enfield, unduly discriminated against traffic which moved via Enfield. (18 I. C. C., 538.)

STATE COMMISSIONS.

The Railroad Commission of Louisiana has under consideration a rule requiring all railways to carry passengers on freight trains, and a hearing will be held July 26.

The State Railroad Commission of Louisiana proposes to require the railways of the state to keep at all stations, where there is an agent, a full assortment of through tickets to all points, and a hearing will be held July 26.

The Railroad Commission of Indiana has requested the roads in the State to suspend, until November 1, the extensive increases in freight rates which they have lately announced. The commission proposes to investigate the new rates, and for this purpose has revived a general inquiry which was begun in 1907.

The commissioners of Minnesota, Iowa, North Dakota and South Dakota, at a conference held in St. Paul last week decided to call the principal railway traffic officers together for a general conference on July 26 with the hope of heading off the general increase in grain rates which has been announced by the railways to go into effect August 15.

The Michigan Railway Commission has issued an order requiring all the railways in that state, whether charging a passenger fare of 2 or 3 cents per mile, to fix the following maximum rates for excess baggage: From one to 10 miles, per 100 lbs., 8 cents; 391 to 400 miles, \$1.30 per 100 lbs., and other distances in proportion. No charge for excess baggage shall be less than 25 cents.

Railway Officers.

ELECTIONS AND APPOINTMENTS.

Executive, Financial and Legal Officers.

A. B. Kearsey, trainmaster of the Atlanta & St. Andrews Bay, has been appointed auditor, with office at Dothan, Ala., succeeding L. D. P'Pool.

H. B. Chamberlain, formerly vice-president in charge of traffic of the Erie Railroad, has been elected vice-president, in charge of traffic, of the Tennessee Central, with office at Nashville, Tenn.

J. E. Franklin has been elected president of the Crystal City & Uvalde, and A. R. Ponder, formerly president and general manager, is now vice-president and general manager, both with offices at Crystal City, Tex.

Operating Officers.

A. D. Shelton, trainmaster of the Southern Railway at Greensboro, N. C., has been appointed superintendent of the Danville division, with office at Greensboro, succeeding H. L. Hungerford, transferred.

J. H. Galivan has been appointed trainmaster of the Saratoga division of the Delaware & Hudson, with office at Albany, N. Y., succeeding W. W. Conaughty, appointed engine despatcher, with office at Green Island.

W. H. Henderson, assistant trainmaster of the Pennsylvania Lines West of Pittsburgh, at Toledo, Ohio, has been appointed trainmaster, with office at Toledo, succeeding L. F. Corcoran, resigned. C. W. Blount, chief clerk to the trainmaster, succeeds Mr. Henderson.

P. G. Flaherty, acting master of transportation of the Grand Trunk at Montreal, Que., has been appointed trainmaster of the Third district, with office at Richmond, and Ernest Walton has been appointed master of transportation, Eastern division, with office at Montreal.

Sullivan S. Morris, superintendent of the Colorado & Southern at Denver, Colo., has been appointed general superintendent of the Yazoo & Mississippi Valley, with office at Memphis, Tenn., succeeding William S. King, resigned. H. E. Renick, assistant superintendent of the Colorado & Southern at Denver, Colo., succeeds Mr. Morris, with office at Denver. J. S. Evans, chief train despatcher, succeeds Mr. Renick.

Traffic Officers.

J. W. Hendley has been appointed a general agent of the Chicago & North Western, with office at Peoria, Ill.

E. H. Bell, commercial agent of the New York Central Lines, at Philadelphia, Pa., has resigned, effective August 1.

E. J. Buckingham has been appointed general passenger agent of the Crystal City & Uvalde, with office at Crystal City, Tex.

C. P. Ensign has been appointed general agent of the Denver & Rio Grande, with office at Los Angeles, Cal., succeeding G. F. Herr, promoted.

Frank M. Adams has been appointed general claim agent of the Puget Sound division of the Chicago, Milwaukee & St. Paul, with office at Seattle, Wash.

John P. Rogerman, traveling passenger agent of the Baltimore & Ohio Southwestern at Dallas, Tex., has been appointed western passenger agent, with office at Kansas City, Mo.

A. W. McElree has been appointed a general agent of the Gulf, Colorado & Santa Fe, with office at Dallas, Tex., succeeding C. L. McManus, resigned to accept service elsewhere.

J. H. Drake, assistant general freight agent of the National Railways of Mexico, has been appointed general freight agent, with office at the City of Mexico, Mex., succeeding C. W. Fish, promoted.

W. L. McWhirter, soliciting freight agent of the Gulf, Colorado & Santa Fe at Galveston, Tex., has been appointed commercial agent, with office at Galveston, succeeding W. J. Nolan, transferred.

W. R. Miller, traveling freight agent of the Chicago, Cincinnati & Louisville at Cincinnati, Ohio, has been transferred to Charleston, W. Va., where he will represent the Chesapeake & Ohio, the Chesapeake & Ohio of Indiana and the Hocking Valley.

W. J. Shotwell, assistant to the vice-president of the Western Pacific at San Francisco, Cal., has been appointed assistant general freight agent, with office at San Francisco. B. F. Nevins has been appointed general live stock agent and W. H. Davenport general agent, both with office at San Francisco.

Edward Mahoney, traveling passenger agent of the Chicago, Milwaukee & St. Paul at Omaha, Neb., has been appointed district passenger agent, with office at Denver, Colo., succeeding S. C. Rhodes, resigned. H. H. Hunkins, traveling passenger agent at Denver, has been transferred to Salt Lake City, Utah.

C. L. McManus, joint freight agent of the Chicago, Rock Island & Gulf and the Gulf, Colorado & Santa Fe at Dallas, Tex., has been appointed general agent of the St. Louis, Brownsville & Mexico and the Brownsville & Matamoros Bridge Company, and general agent in charge of operation of the Rio Grande Railroad, with office at Brownsville, Tex.

Nat H. Hall, soliciting freight agent of the Trinity & Brazos Valley at Galveston, Tex., will succeed to the duties of H. P. Bonner, commercial agent, whose resignation has been announced in these columns, under the title of soliciting freight agent. B. H. Stephens, general agent at Corsicana, Tex., whose appointment as general agent at Dallas, succeeding E. E. Peacock, has been announced, will continue to have charge of the Corsicana territory.

W. A. Beckler, whose appointment as general passenger agent of the Queen & Crescent, with office at Cincinnati, Ohio, has been announced in these columns, began railway work with the Columbus, Hocking Valley & Toledo as a ticket seller at Middleport, Ohio. He was afterward made ticket agent and for four years from June, 1889, he was a traveling passenger agent for the Chicago, St. Paul & Kansas City, with headquarters at Chicago. He then went with the Great Northern as passenger and ticket agent at Spokane, Wash. From March, 1894, to August, 1908, he was northern passenger agent of the Queen & Crescent Route at Chicago, when he was made assistant general passenger agent of the Cincinnati, New Orleans & Texas Pacific and the Alabama Great Southern at Cincinnati, from which position he has recently been promoted.

Charles W. Fish, who has been appointed traffic manager of the National Railways of Mexico, with office at City of Mexico, Mex., was born August 25, 1863, near Natchez, Miss. Mr. Fish was educated in the public schools of Girard, Ill., and began railway work in 1882 as a telegraph operator on the Missouri Pacific. He was later a clerk and traveling accountant for this company. From January, 1888, to September, 1894, he was traveling accountant and local freight agent of the International & Great Northern, and since September, 1894, he has been in the service of various companies, all of which are now a part of the National Railways of Mexico. From September, 1894, to March, 1901, he was general freight and passenger agent, also auditor, of the Texas Mexican Railway, and commercial agent of the National Railroad of Mexico at Laredo, Tex. For a short time in 1901 he was assistant auditor and then for three years was auditor of the National Railroad of Mexico. In May, 1904, he was appointed general freight agent of the same road, the Mexican International and the Interoceanic Railway of Mexico, remaining in that position until March 1, 1909, when he was made general freight agent of the National Railways of Mexico and the Interoceanic Railway of Mexico, which position he held at the time of his recent appointment.

Engineering and Rolling Stock Officers.

Charles F. Roberts has been appointed assistant locomotive superintendent of the United Railways of Havana, with office at Havana, Cuba.

W. V. O'Neill has been appointed master mechanic of the Crystal City & Uvalde, with office at Crystal City, Tex., succeeding J. S. Hardwick.

D. P. Kellogg, master mechanic of the Southern Pacific at Los Angeles, Cal., has been appointed shop superintendent of the Los Angeles general shops.

T. Martin, assistant division engineer of the Canadian Pacific, at Calgary, Alberta, has been appointed a division engineer of the new Saskatchewan division, with office at Moose Jaw, Sask. H. B. Sims, resident engineer at Moose Jaw, has been appointed an assistant division engineer.

OBITUARY.

Lester O. Goddard, for 27 years connected with the law department of the Chicago, Burlington & Quincy, at Chicago, died at Riverside, a suburb of Chicago, on July 13.

I. G. Rawn, president of the Chicago, Indianapolis & Louisville, was shot and killed by a burglar at his summer home at Winnetka, Ill., on July 20. Mr. Rawn was born August 20, 1855, at Delaware, Ohio. He received a common school education, and began railway work in 1870 as a telegraph operator on the Cleveland, Columbus, Cincinnati & Indianapolis, now a part of the Cleveland, Cincinnati, Chicago & St. Louis. He was later a train despatcher and then trainmaster on the same road. From October, 1887, to January, 1889, he was master of transportation on the Kentucky Central, now a part of the Louisville & Nashville, and from January, 1889, until the following January he was division superintendent and superintendent of transportation on the Chesapeake & Ohio. In 1890 he became general superintendent of the Baltimore & Ohio Southwestern, and held this position about 12 years. Following this he was for about four months general superintendent of the Baltimore & Ohio, but in March, 1903, he went to the Illinois Central. From March, 1903, for three months he was assistant to the second vice-president of the I. C., and then was consecutively general superintendent of transportation, assistant general manager, general manager and vice-president. Mr. Rawn left the Illinois Central to become president of the Chicago, Indianapolis & Louisville on November 1, 1909.



I. G. Rawn

The Russian authorities have approved plans for building a railway nearly parallel with and some 175 miles south of the Siberian Railway, from Uralsk, on the Ural river, eastward through Orenburg, Orsk and Akmolinsk to Semipalatinsk, which is a town on the navigable Irtysh river, and connected by steamboats with the Siberian Railway. The country on the route is semi-arid, but at the eastern end, near the foot of a mountain chain, is more fertile. From Uralsk to Semipalatinsk the distance is some 500 miles, but only 300 miles will be undertaken at present. The authorities also contemplate a line from Semipalatinsk northeastward by Barnaul, on the Ob, to a point where this river is navigable. The route is in or near the foothills of the Altai range, a productive country which has already attracted many Russian settlers and has valuable mines. Besides these a coal road 125 miles long to bring coal to the Ob river and two lines in Central Asia, one 350 and one 540 miles long, are recommended.

Railway Construction.

New Incorporations, Surveys, Etc.

ALABAMA, TENNESSEE & NORTHERN.—This road has been extended from Panola, Ala., to Geiger, five miles. (March 11, p. 546.)

ANGELINA & NECHES RIVER.—An officer writes that work has been completed on an extension north to Naclina, Tex. The company is planning to build a further extension but is not yet ready to let contracts for the work. (Oct. 29, p. 827.)

ARIZONA & CALIFORNIA.—See Atchison, Topeka & Santa Fe.

ARIZONA EASTERN.—See Southern Pacific.

ARIZONA, MEXICO & GULF OF CALIFORNIA.—This company, which was organized last March to build from some point on the Arizona Southern, in Nevada, to Port Lobos, on the Gulf of California, about 225 miles for the main line with possible branches to Tucson and Phoenix, has let contracts to C. J. Lantry, of Kansas City, and E. J. Scott, of St. Louis, Mo. The Arizona Southern (owned by The Imperial Copper Company, which in turn is controlled by The Development Company of America), runs from Redrock, on the main line of the Southern Pacific, to Silverbell, Arizona, where the mines of The Imperial Copper Company are located. The contracts recently let call for the construction of 225 miles of main line from Port Lobos northeast to the Arizona Southern. It is expected to have the line built by the end of 1911. The plans also call for a 2,900-ft. pier at Port Lobos. B. P. Cheney, president, 81 Ames building, Boston, Mass.; V. L. Mason, vice-president, New York. The Arizona-Mexico Construction Company, 11 Pine street, New York, was organized to construct the line. F. M. Murphy, president. (April 22, p. 1064.)

ATCHISON, TOPEKA & SANTA FE.—The Arizona & California has been finished from Parker, Ariz., westward to Cadiz, Cal., 84.4 miles, and on July 1 the new Los Angeles-Phoenix line was opened for business. (May 20, p. 1286.)

ATLANTIC NORTHERN & SOUTHERN.—An officer writes that a grading contract was given July 1 to Shuggart & Barnes Brothers, Des Moines, Iowa, for work on an extension of 38 miles from Atlantic, Iowa, south via Grant to Villisca. The company now operates a 17-mile line from Atlantic north to Kimballton. Maximum grades will be 1.75 per cent. and maximum curvature 5 degs. (Nov. 26, p. 1036.)

ATLANTIC, QUEBEC & WESTERN.—This road has been extended from Fort Daniel, Que., northeasterly to Newport, 15 miles. (May 13, p. 1236.)

BANGOR & AROOSTOOK.—The Washburn extension has been opened for business. This consists of a line from Squa Pan, Me., northeasterly via Mapleton to Stockholm, 48 miles, with a branch from Mapleton eastward to Presque Isle, 7.5 miles. (Sept. 10, p. 477.)

BIG BEND TRANSIT.—An officer writes that the Secretary of the Interior has granted this company the only available terminals on the Spokane-Indian reservation, at the junction of the Spokane and Columbia rivers in Washington. The company has grading finished on its right-of-way through the Spokane-Indian and military reserves, and expects to begin construction work this year on the line, which is to be about 65 miles long. The projected route is from Spokane, Wash., west along the south bank of the Spokane river, to the mouth of that river, thence north, crossing the Spokane river and following the east bank of the Columbia river. Maximum grades will be 1 per cent., and there will be two bridges and several trestles. William A. Nicholls, president, 105 Howard street, Spokane. (Dec. 10, p. 1166.)

BRITISH COLUMBIA ELECTRIC.—A contract is said to have been given to McAlpine, Roberts & Co., Vancouver, B. C., for grading work on extensions of the North Vancouver lines in the Capilona district. (Nov. 12, p. 942.)

CANADIAN NORTHERN.—An officer writes that a contract has been given to the Northern Construction Co., Ltd., Winnipeg, Man., to build under the name of the Canadian Northern Pacific.

a section of 60 miles of the proposed line from Vancouver, B. C., east along Fraser and North Thompson rivers via Lytton and Kamloops to Yellow Head Pass. The work will be heavy. Detailed plans of the line through the mainland of British Columbia from the lower Fraser terminals at Port Mann to a point on Moose lake, eastward of Tete Jaune Cache, are said to have been filed with the chief commissioner of lands and formally accepted. The first section includes the 37 miles from Yale, south along the Fraser river to Chilliwack. The second section extends from Chilliwack to New Westminster bridge. From Kamloops the line follows the North Thompson river 156 miles to its headwaters. Plans for the section from the North Thompson to McLennan river have not yet been filed. The eastern line is to connect with this section, and will extend from the headwaters of Canoe river northerly to about 10 miles south of Tete Jaune Cache, at the junction of the McLennan with the Fraser river, thence continue easterly a total of 33.6 miles. The plans filed cover upwards of 400 miles of construction, but do not include a section of about 30 miles on the mainland. On Vancouver Island two reconnaissance parties are now in the field, one on the northern shore of Cowichan lake, and the other more southerly. It is expected that the reports will be made and the route decided upon in July so that contracts can be let at once. (July 15, p. 142.)

An officer writes that contracts have been let to Foley, Welch & Stewart, St. Paul, Minn., to build the Duluth, Winnipeg & Pacific from Duluth, Minn., north to Virginia, about 75 miles, where connection is to be made with the Duluth, Rainy Lake & Winnipeg. The contract already let is for all of the work except the station buildings, water tanks and superstructures of steel bridges. The contracts for this work will be let at an early date. (July 8, p. 107.)

CANADIAN NORTHERN PACIFIC.—See Canadian Northern.

CANADIAN NORTHERN QUEBEC.—An extension has been opened for business from Rawdon Junction, Que., to Rawdon, 5.7 miles. (March 11, p. 546.)

CROSBYTON-SOUTH PLAINS.—An officer writes that contracts are let to M. H. Denison, Lubbock, Tex., for the grading, trestles, track-laying and surfacing work on this line. The projected route is from Lubbock, Tex., where connection is to be made with the Atchison, Topeka & Santa Fe northeasterly, thence easterly to Crosbyton, about 40 miles. There will be two trestles, one of 500 ft. and another 1,000 ft. long and 40 ft. high. (July 8, p. 103.)

DEERING SOUTHWESTERN.—An officer writes that this line is to be extended at once from Deering, Mo., east to Caruthersville, on the Mississippi river, about 13 miles. An extension will also be built soon from Camp, the present southern terminus, southwest to Hornersville, about eight miles. (July 15, p. 142.)

DULUTH, WINNIPEG & PACIFIC.—See Canadian Northern.

GRAND TRUNK.—Plans are being made for depressing the tracks of the Grand Trunk in Toronto, Ont., it is said, from Bathurst street to Sunnyside crossing. The work is to be started at once and will cost about \$500,000. When the improvements are finished there will be four tracks between Bathurst street and the freight yard at New Toronto.

GREAT LAKES CONNECTING.—Surveys are being made and right-of-way is being secured for a line through Lawrence county, Pa. The company was organized to build from Elwood City, Pa., northeast to Raymilton, 42 miles. (Feb. 11, p. 329.)

KENTUCKY ROADS.—Plans are being made to build a line from Corbin, Ky., west through coal and timber lands via Somerset to Hopkinsville, about 200 miles. The first section to be built will be from Corbin west to Somerset, 30 miles. C. Williams, Somerset, is secretary of the railway committee.

KETTLE RIVER VALLEY.—This company, which eventually will have a line to connect Vancouver, B. C., with the Kootenays, is said to have given a contract to Macdonnell, Gzowski & Co., Vancouver, for work on 30 miles of the section between Merritt and the headwaters of Coldwater river. The company will receive a subsidy of \$5,000 a mile from the province of British Columbia for 150 miles. From Coldwater the line is to be built eastward in the direction of Penticton, and either the main line or a branch will be built to Princeton. From Penticton the line is to be extended to Midway. From a point 10 miles northeast

of Midway the grade which was built by the Midway & Vernon between Rock Creek and Midway, will be used.

KNOXVILLE, SEVIERVILLE & EASTERN.—An extension of 15 miles is to be built, it is said, from the present eastern terminus at Sevierville, Tenn. (Nov. 5, p. 895.)

LOUISVILLE, LINCOLN FARM & MAMMOTH CAVE TRACTION.—An officer writes that contracts are to be let about September 1 for building this line from Mammoth Cave, Ky., southeast to Glasgow; also to Lincoln Farm and Hodgenville. Maximum grades will not be over 3 per cent. There will be two steel bridges and a hydraulic power house at Green river. J. M. Richardson, president, and C. Van-den-Burgh, general manager, Glasgow; H. H. Snyder, chief engineer. (May 20, p. 1282.)

MEMPHIS, DALLAS & GULF.—See this company in Financial News.

MISSOURI, OKLAHOMA & GULF.—The extension from Durant, Okla., south has been finished to Achille, 11 miles, and is now open for business. About 15 miles remains to be built to complete the extension to Denison, Tex. (May 13, p. 1237.)

NEVADA COPPER BELT.—This company, which now operates a line from Wabuska, Nev., east via Yerington to Mason, 14 miles, has construction work under way on 20 miles from Mason to the Nevada-Douglas Copper mine. P. J. Conway, Sweetwater, Nev., has a contract for some of the work. An officer writes that it is undecided when contracts will be let for a section of eight miles to complete the line to the Douglas mine. (Dec. 24, p. 1261.)

NORTHERN PACIFIC.—Passenger service is now in operation on the Red Mountain branch of the Rocky Mountain division from Helena, Mont., westward to Rimini, 18 miles.

The Roslyn branch of the Seattle division has been extended from Roslyn, Wash., to Beekman, three miles.

OREGON SHORT LINE.—An officer writes regarding the reports that a cut-off is to be built from Logan, Utah, northwest to Cache Junction, that plans for this work have not yet been adopted. (July 8, p. 104.)

An officer is quoted as saying that work is to be started at once on a branch from Montpelier, Idaho, southwest to Paris, in the Bear river country, 11 miles.

PHOENIX & BUCKEYE.—See Southern Pacific.

ST. LOUIS, FORT SMITH & DALLAS.—Incorporated in Oklahoma, with \$50,000 capital, to build from the Arkansas state line at Fort Smith, thence across the Poteau river southwest to Wilburton, in Latimer county, Okla., 60 miles. The estimated cost of the work is \$10,000 a mile. The incorporators include: John Vaughan, M. C. Burke, Fort Smith, Ark.; R. S. Willie, R. C. Alexander, Rogers; J. E. Reynolds and W. M. Murray, Arkoma, Okla.

SOUTHERN PACIFIC.—An officer writes that the Phoenix & Buckeye, which has been taken over by the Arizona Eastern, is building from Phoenix, Ariz., westward via Liberty and Buckeye to Arlington, towards Yuma, 50 miles. Track has been laid on 40 miles. Shattuck & Erdlinger Co., Los Angeles, Cal., are the contractors. Important trestles will be built across the Agua Fria and Hassayampa rivers. (March 18, p. 749.)

An officer writes that a survey has been made for a branch line from a point on the road between Woodland, Cal., and Tehama at Arbuckle, north via Colusa, Princeton and Glenn to Hamilton, which is the eastern terminus of a branch extending from Wyo east. The new line will have a total length of about 50 miles.

UNION PACIFIC.—The Pleasant Valley branch of the Colorado division has been opened for business from Cloverly, Colo., to Hungerford, 13 miles. (Oct. 29, p. 829.)

UNITED RAILWAYS CO. (ELECTRIC), PORTLAND, ORE.—This company is said to have let a contract to build a section of 11 miles from Burlington, Ore., west to Glencoe. Bids were asked for recently to build from Glencoe west to Bay City, about 56 miles. (June 3, p. 1391.)

UTAH ROADS.—According to press reports, residents of Beaver, Utah, are back of a project to build a line from Milford south to Minersville, thence east via Adamsville to Greenville, about 35 miles.

Railway Financial News.

BOSTON & ALBANY.—President Brown, of the New York Central, says that the Boston & Albany deficit, that is, the part of the 8 per cent. dividend on stock that the New York Central & Hudson River has been called on to make good under its lease of the B. & A., is as follows:

1905.....	\$28,355
1906.....	450,181
1907.....	1,339,006
1908.....	1,624,177
1909.....	577,834

BOSTON RAILROAD HOLDING CO.—The directors have voted to ask the Massachusetts Railroad Commission for permission to issue new preferred stock, to be guaranteed by the New York, New Haven & Hartford. No statement of the amount of the stock has been made public, but it is understood that if the desired permission is given, the New Haven company will probably return to the Boston Railroad Holding Co. the \$20,012,000 4 per cent. bonds of the Holding company which the New Haven now has in its treasury, and will receive in exchange an equal amount of preferred stock. The Holding company owns a controlling interest in the stock of the Boston & Maine.

BUFFALO & SUSQUEHANNA RAILWAY.—The federal court has authorized the receiver to issue \$383,000 receiver's certificates.

CANADIAN NORTHERN.—The company has issued \$3,000,000 series "V" 4½ per cent. first mortgage equipment bonds, maturing 10 per cent. annually from November 1, 1911, to 1920. The mortgage is secured on 3,250 freight cars, 43 passenger cars and three locomotives. The amount of the bond issue represents 75 per cent. of the cost of this equipment.

CENTRAL NEW ENGLAND.—Joseph Moore, Jr., has sent a letter to the minority stockholders asking them to accept the offer of the New York, New Haven & Hartford to buy their stock at \$45 a share for the preferred and \$22.50 for the common, providing sufficient of the outstanding stock is delivered. The New York, New Haven & Hartford owns \$3,420,285 of the \$3,750,000 preferred stock and \$4,432,776 of the \$4,800,000 common stock of the Central New England.

CHESAPEAKE & OHIO.—The Chesapeake & Ohio Equipment Corporation has been chartered in Virginia with \$1,000,000 authorized stock. The charter of this company is in connection, it is said, with the preparations for a new issue of equipment bonds. George W. Stevens, president of the C. & O., is president of the new company.

CHESAPEAKE & OHIO OF INDIANA.—This company, which has been formed to take over the Chicago, Cincinnati & Louisville, is to issue \$8,200,000 bonds dated July 1, 1910. The total authorized capital stock is \$3,000,000.

CHICAGO, CINCINNATI & LOUISVILLE.—See Chesapeake & Ohio of Indiana.

HOCKING VALLEY.—Colonel S. C. Reynolds, who was recently elected a director of the Kanawha & Michigan, has been elected also a director of the Hocking Valley. The special meeting to authorize an increase of the common stock to \$26,000,000 has been again adjourned to July 21. It is understood that the only suit now pending in the federal courts against the Hocking Valley is the one affecting the right of the Chesapeake & Ohio to the ownership of the majority of the stock of the Hocking Valley.

KANSAS CITY, FORT SCOTT & MEMPHIS.—The New York Stock Exchange has listed \$1,069,000 additional 4 per cent. guaranteed refunding mortgage bonds. Of these bonds \$592,000 were issued to retire an equal amount of underlying bonds, \$167,000 were issued for refunding purposes and \$310,000 were issued for additional lines and terminals.

MEMPHIS, DALLAS & GULF.—The company has filed a certificate of increase of capital stock from \$645,000 to \$7,875,000. The proceeds of the sale of the additional capital stock is to be used, it is said, to extend the line from Murfreesboro, Tenn., to Memphis.

MISSOURI PACIFIC.—See St. Louis, Iron Mountain & Southern.

NEW YORK, CHICAGO & ST. LOUIS.—A semi-annual dividend of 2½ per cent. on the \$5,000,000 first preferred, and 2½ per cent. on the \$11,000,000 second non-cumulative preferred stock has been declared payable September 1. Dividends have heretofore been paid annually in March. In 1907 5 per cent. was paid on the first preferred and 4 per cent. on the second preferred and nothing on the common; in 1908 and 1909 5 per cent. each was paid on the first preferred and second preferred and nothing on the common; in March, 1910, 5 per cent. was paid on each of the first preferred and second preferred and 3 per cent. was paid on the common.

NEW YORK, NEW HAVEN & HARTFORD.—T. De Witt Cuyler has been elected a director, succeeding J. H. Whittemore, deceased. Mr. Cuyler is an additional representative of the Pennsylvania interests on the New Haven board. He is a director of the New Haven, of the Atchison, Topeka & Santa Fe, and was recently elected a director of the New York, Ontario & Western, a subsidiary of the New Haven.

See also Central New England.

See Boston Railroad Holding Co.

See also an item in regard to this company in General News.

NEW YORK, SUSQUEHANNA & WESTERN.—The second mortgage bondholders of the Middletown, Unionville & Water Gap have refused to accept the extension of their bonds, of which there are \$250,000 outstanding, for one year from June 1. The interest on the first mortgage bonds is guaranteed to November 1, 1911, by the New York, Susquehanna & Western, which operates the Water Gap and owns a majority of the \$150,000 stock. The interest on the second mortgage bonds was guaranteed by the Susquehanna up to June 1, when the principal became due, and the Susquehanna offered, if the bondholders would consent to the extension of the principal, to guarantee interest for a year, but 60 per cent. of the bondholders refused this offer and no interest is now being paid.

NORTHERN CENTRAL.—The committee representing the minority stockholders and the committee representing the majority stock have agreed with the Pennsylvania Railroad to a 999-year lease by the Pennsylvania of the Northern Central. The holders of the stock, \$19,342,550, are to receive a stock dividend of 40 per cent. and 10 per cent. in cash paid from treasury assets. The Pennsylvania Railroad is to guarantee 8 per cent. dividends on both the old and the new stock. After the Pennsylvania Railroad directors have passed on the report of their committee, the stockholders of the Northern Central will vote on the question of approving the lease.

PENNSYLVANIA RAILROAD.—The Philadelphia Stock Exchange has listed \$12,750,000 additional Allegheny Valley general mortgage 4 per cent. bonds. These bonds were issued to retire \$10,000,000 Allegheny Valley first 7 per cent. bonds due April 1, 1910, and for general purposes.

See also Northern Central.

The New York Public Service Commission, New York City, has approved an agreement between the Pennsylvania Tunnel & Terminal, which owns the Pennsylvania tunnels, and the Pennsylvania Railroad, whereby the Pennsylvania Railroad is to operate the tunnels and to pay the Tunnel company the net profits from this operation for the 10 months beginning August 1.

ST. LOUIS, IRON MOUNTAIN & SOUTHERN.—This company has declared an annual dividend of 6 per cent. This contrasts with 4 per cent. paid in 1908-1909, 5 per cent. in 1907-1908, 14 per cent. in 1906-1907. Of the \$44,396,573 stock of the Iron Mountain, the Missouri Pacific owns \$44,336,600.

WHEELING & LAKE ERIE.—The United States Circuit Court has authorized the receiver to issue \$180,000 receiver's certificates, the proceeds of the sale of which will be used for the completion of the Sugar Creek & Northern branch. The court has also authorized the extension of \$750,000 receiver's certificates, due July 1, August 7 and September 1. Arrangements for the extension of these certificates have been made through Kuhn, Loeb & Co. and Blair & Co., both of New York. The court has refused the receiver's request for authority to issue an additional \$240,000 certificates for the purchase of tools, construction stations, etc.

Supply Trade Section.

The Railway Supply Manufacturers' Association has moved its offices from 313 Sixth avenue, Pittsburgh, Pa., to room 2135, Oliver building.

John F. Schurch, chief clerk to the president of the Minneapolis, St. Paul & Sault Ste. Marie, has been elected treasurer of the Railway Materials Co., with office in the Old Colony building, Chicago.

The Isthmian Canal Commission will receive bids until August 5 for lumber, centrifugal pumps and fittings for same, steel castings, locomotive and truck springs, steel links for cross conveyor, non-liquid oil, cable grease, etc. (Circular No. 595.)

The Atchison, Topeka & Santa Fe has ordered from the Western Electric Co. 600 of the Western Electric new telephone selectors—the largest order for selectors ever given. The New York Central and the Pennsylvania have given repeat orders for these selectors.

The motive power department of the Chilian Transandine Railway, Ltd., wants catalogues of all kinds of locomotive equipment and supplies, and machinery and supplies for railway shops. These catalogues should be addressed as follows: Locomotive Superintendent, Transandine Railway Company, Ltd., Los Andes, Chile, S. A.

Virgil G. Bogue, consulting engineer, 15 William street, New York, has returned to his headquarters at the New York office. It will be recalled that Mr. Bogue has for the past four years spent much of his time in the west as vice-president and chief engineer of the Western Pacific, which road he built and turned over to its owners last January.

The freight car shop of the Pullman Co., Pullman, Ill., was struck by lightning July 17, and the south end of the building was partly destroyed by fire. The damage was confined to the engine and boiler rooms and the dry kilns; the loss was entirely covered by insurance. The erecting shop, which contained 90 refrigerator cars at the time, was not damaged. It is expected that the plant will be running normally in a few days.

George E. Hannah, who went into the general machinery business after resigning his position with the American Locomotive Co., has concluded that he will again join the ranks of the railway supply fraternity. His address is Paterson, N. J. Mr. Hannah was identified with the Rogers Locomotive Co. before it was taken over by the American Locomotive Co. and served as a salesman, purchasing agent, secretary, treasurer and assistant to the president.

Dexter L. Phipps, general manager of the Chicago Refrigerator Car Co., has resigned to become president and director of the Chicago Car & Equipment Co., Clearing, Ill. Mr. Phipps has been engaged in the car building business for the past 20 years and is thoroughly experienced in this line. The Chicago Car & Equipment Co. has been in business during the past year, its work being largely in the line of car and locomotive repairs. The company expects to open offices and headquarters in Chicago in a short time.

The Southern Railway Equipment Co., St. Louis, Mo., entered its new building, 113 North Second street, on July 1. This company has secured the direct agency for that territory for the Anchor Packing Co., and D. J. Murray, the local representative of that company has taken charge of the packing department of the Southern Railway Supply Co. M. E. Towner, whose resignation as purchasing agent of the St. Louis & San Francisco has been announced in these columns, has been elected president of the company, Mr. Bartman becoming secretary.

At a meeting of the board of directors of The Petroleum Iron Works Co., Sharon, Pa., on July 11, 1910, C. H. Todd, of Washington, Pa., was elected president to succeed E. G. Wright, resigned. Mr. Todd, who was one of the founders of the Petroleum Iron Works Co., and who will be in active charge of the company's affairs, is well and favorably known, especially in the eastern and southwestern oil fields. The directors reported the plant as running at full capacity, with sufficient orders booked to insure a steady run for several months, and the financial position of the company as unusually strong.

TRADE PUBLICATIONS.

Locomotive Coaling Stations.—The Roberts & Schaefer Co., Chicago, has issued its Bulletin No. 21, containing illustrations and detail information of 25 coaling stations which it has designed and built for railways.

Unions.—The Jefferson Union Co., Lexington, Mass., has recently issued a catalogue of its style F male and female union. This company is preparing a catalogue on its new swing union, which will be distributed in the near future.

Sash Operator.—The G. Drouvé Co., Bridgeport, Conn., has just issued a folder setting forth the important features of its "Straight-Push" sash operator for shop buildings, etc. Three photographs are reproduced, two of which show, in half-tone, an installation, the third being a line drawing made from a photograph of a test made on a 150-ft. installation. Seven men are seen standing at equal distances along the sash which is being raised with them, under the control of one man.

RAILWAY STRUCTURES.

LOS ANGELES, CAL.—The Pacific Electric has let the contract to the Weber-Duller Co., Los Angeles, for building a reinforced concrete bridge 396 ft. long and 32 ft. wide over the tracks of the Los Angeles Railway Co. at Cornwell street.

MAMMOTH CAVE, KY.—See Louisville, Lincoln Farm & Mammoth Cave Traction, under Railway Construction.

OTTAWA, ONT.—Bids are wanted up to July 25 by L. K. Jones, secretary of the Department of Railways and Canals, at Ottawa, for the substructure of the Le Pas bridge on the Hudson Bay Railway. (July 8, p. 107.)

PORTLAND, ORE.—An officer of the Oregon Railroad & Navigation Co. writes that bids are in and work is to be started at once on a brick and steel freight station at Portland. The structure will be one-story high, 70 ft. wide, 1,000 ft. long, and cost about \$142,000. Contract for the work has not yet been let.

The double-deck steel bridge to carry two tracks for the Oregon Railroad & Navigation Co. to be built over the Willamette river at Portland, is to have concrete foundations. The bridge will consist of two 286-ft. spans, one 212-ft. span, two 60-ft. girders, 818-ft. highway viaduct. The towers for the lift span will be 265 ft. high, and the improvements will require 6,500 tons of steel. The total estimated cost is \$1,500,000. A contract for the sub-structure has been given to the Union Bridge & Construction Co., Kansas City, Mo. Contract for the steel and erection has not yet been let. (June 17, p. 1572.)

QUEBEC, QUE.—The Quebec bridge, for which bids for the superstructure are being asked for by L. K. Jones, secretary of the Department of Railways and Canals at Ottawa, Ont., up to September 1, is to be of steel construction, requiring about 70,000 tons. It will be a cantilever bridge with a 1,758-ft. span between the river piers. The greatest height of the trusses will be 290 ft. Contract for the foundation work has been let to M. P. & J. T. Davis. (July 15, p. 145.)

ST. LOUIS, MO.—The city council has passed a bill authorizing the abolishment of the grade crossing at Compton avenue. The Missouri Pacific, the St. Louis & San Francisco, the Wabash, and the Terminal Railroad of St. Louis will unite in the construction of the steel viaduct, the companies agreeing to pay for the structure and pay all property damages. The cost is estimated at \$370,000, and the time for its completion is set for July 1, 1911.

The Chicago, Rock Island & Pacific has let the contract to T. S. Leake & Co., Chicago, for building a roundhouse, oil house and machine shop. These buildings were mentioned in the *Railway Age Gazette* of March 18.

WEATHERFORD, TEX.—The Gulf, Colorado & Santa Fe has let the contract to H. D. McCoy, Cleburne, Tex., for building a combined passenger and freight depot. The building is estimated to cost \$20,000. (June 3, p. 1393.)

WICHITA FALLS, TEX.—The six roads entering Wichita Falls have agreed on plans for a union station and the contract for the building has been let to the Texas Construction Co., Fort Worth, Tex. The contract price is \$97,000, and the date for completion is fixed as January 1, 1911. The building will be 281 ft. long, two stories high and of fireproof construction. (May 13, p. 1239.)

Late News.

The items in this column were received after the classified departments were closed.

The Southern Indiana is considering ordering five consolidation locomotives.

William Daves, special signal engineer of the Chicago Great Western, with office at Chicago, was thrown from a motor car and killed on July 19 near Oelwein, Iowa.

The attempt to have the Grand Trunk strike of conductors and trainmen settled by arbitration had up to Thursday failed. Vice-President Murdock, of the Brotherhood of Railroad Trainmen, said that the trainmen would not consent to arbitration. See page 165.

A press despatch from Mexico City says that the National Railways of Mexico have placed an order for new equipment amounting to \$4,000,000 gold. It calls for 20 Mallett articulated compound locomotives, mail, baggage and express cars and 3,200 freight cars.

The supreme court of Alabama has ordered the sale, on August 1, of the entire stock of the Chattanooga Southern, of which there is \$2,250,000 common and \$750,000 preferred. The road runs from the Tennessee state line to Gadsden, Ala., 87 miles, and has trackage rights into Chattanooga.

The fourth annual meeting of the American Peat Society will be held at Ottawa, Can., on July 25, 26 and 27. The place of meeting is especially appropriate, as the Canadian government maintains a fuel-testing plant for peat only at Ottawa. The program, which consists of a number of individual papers on the use of peat, includes a visit to the government plant. Julius Bordol, of Kingsbridge, New York city, is the secretary.

The Central City & Pactolus has been incorporated in Colorado, with \$1,250,000 capital, to build from Pactolus, Colo., on the Denver, Northwestern & Pacific, near the mouth of the South Beaver creek, in Gilpin county, south to Central City, thence via Nevadaville to Russell gulch about 12 miles. A branch may also be built from Central City, east to Black Hawk. The incorporators include T. E. Watters, J. McDonough, F. H. Gray, D. J. Davies and P. L. Morris.

All the railways in official classification territory, which include the roads operating in the Western Trunk Line Committee territory, in the central territory and east of Chicago, have voluntarily postponed the effective date of their increased freight rates until November 1. This action on the part of the railways follows the announcement by the Interstate Commerce Commission that it had decided to suspend all important increases pending an investigation into their reasonableness. This makes it unnecessary for the I. C. C. to suspend the rates piecemeal.

Announcement is made that the railways are working on the details of a plan for collecting and diffusing correct information regarding rates, the relation which these rates bear to the value of commodities and other pertinent matters. It is hoped that the wide dissemination of this information will result in the better understanding between the general public, the shippers and the railways. In various sections, specific studies will be made of the causes of any dissatisfaction that may be found, so as to explain the conditions that determine the attitude of railways or to remove the causes of just complaint if it be found that the railways are at fault. This undertaking is in pursuance of the belief that if both the public and the railways have a clear and fuller knowledge and better understanding many differences which now arouse irritation will not only be lessened but removed. A bureau of railway economics, with a central office at Washington, will be charged with the collection, computation and verification of necessary statistics and with the consideration of events of general interest in the transportation field. This bureau will co-operate with the railways in the endeavor to bring about improvements in the relations between them and the public. The committee which is formulating this plan consists of W. C. Brown, of the New York Central Lines; E. P. Ripley, of the Santa Fe; W. W. Finley, of the Southern Railway; Darius Miller, of the Burlington; Daniel Willard, of the Baltimore & Ohio, and B. L. Winchell, of the St. Louis & San Francisco.

Equipment and Supplies.

LOCOMOTIVE BUILDING.

The Atlantic Northern & Southern expects to be in the market for locomotives within from 30 to 60 days.

The Atlantic Coast Line, as reported in the *Railway Age Gazette* of July 8, has ordered six simple consolidation locomotives from the Baldwin Locomotive Works.

General Dimensions.

Weight on drivers.....	150,000 lbs.
Total weight.....	168,000 lbs.
Cylinders.....	21 in. x 28 in.
Diameter of drivers.....	56½ in.
Type of boiler.....	Extended wagon top
Working steam pressure.....	185 lbs.
Heating surface, tubes.....	2,332 sq. ft.
“ “ firebox.....	163 “ “
“ “ total.....	2,495 “ “
Tubes, number.....	320
“ outside diameter.....	2 in.
“ length.....	14 ft.
Firebox, type.....	Wide
“ length.....	107½ in.
“ width.....	65½ in.
“ material and maker.....	Steel, Baldwin
Grate area.....	49 sq. ft.
Water capacity.....	6,000 gals.
Coal capacity.....	15½ tons

Special Equipment.

Axles.....	Hammered steel
Boiler lagging.....	Franklin
Brakes.....	American Brake Co.
Brake beams.....	American Brake Co. and Creco
Brake shoes.....	American Brake Shoe Co.
Brick arch.....	American Arch Co.
Couplers.....	N.M.C. Co.'s Tower
Driving boxes.....	Cast steel
Headlight.....	Dressel oil
Injector.....	Hancock 10A
Journal bearings.....	Damascus bronze
Piston and valve rod packings.....	U. S. Metallic
Safety valve.....	Consolidated—3—2½
Sanding devices.....	Leach “B”—American Loco. Sander Co.
Sight-feed lubricators.....	Detroit
Steam gages.....	Star Brass Co.
Tires.....	Midvale
Tubes.....	Spellerized steel
Valve gear.....	Walschaerts
Wheel centers.....	Cast steel

CAR BUILDING.

The Atlantic Northern & Southern expects to be in the market for rolling stock within from 30 to 60 days.

The Baltimore & Ohio has ordered the 1,000 composite gondola cars for which it has been in the market for some time. These cars complete the 5,000 car inquiry previously noted and reported in the *Railway Age Gazette* of July 15.

The Texas Company, Houston, Tex., has ordered 200 tank cars from the American Car & Foundry Co. The cars are divided into the following classes: 85, 8,000-gal., single-compartment; 10, 8,000-gal., two-compartment; 15, 8,000-gal., three-compartment; 65, 6,000-gal., single-compartment; 25, 6,000-gal., two-compartment.

MACHINERY AND TOOLS.

The Chicago, Milwaukee & St. Paul has ordered the tools mentioned in the *Railway Age Gazette* of July 8, the 36-in. upright drill being placed with E. Harrington & Son, and the remainder of the tools with Manning, Maxwell & Moore.

IRON AND STEEL.

The Western Maryland has ordered 12,000 tons of bridge steel from the McClintic-Marshall Construction Co.

The Erie has ordered 1,000 tons of bridge steel from the Pennsylvania Steel Co. for a lift bridge at Cleveland, Ohio.

The Baltimore & Ohio has ordered 1,000 tons of rails from the Carnegie Steel Company and 500 tons from the Illinois Steel Company.

The Oregon Railway & Navigation Co. will use 6,500 tons of structural steel for the double-track bridge to be built over the Willamette river at Portland, Ore.

The National Brake & Electric Co., Milwaukee, Wis., has let the contract to the American Bridge Co. for the structural steel for its new machine shop and warehouse.

The Quebec Bridge, for which bids are now being asked by L. K. Jones, secretary, Department of Railways and Canals, Ottawa, Ont., will require 70,000 tons of steel.

The Lima Locomotive & Machine Co., Lima, Ohio, has let the contract to the Massillon Bridge & Steel Co. for 600 tons of structural steel for an addition to its plant.

The Memphis Union Station Co., Memphis, Tenn., has ordered 708 tons of structural steel from the Richards-Noelke Iron Works, Indianapolis, Ind., for the new union passenger station.

The Denver & Rio Grande and the Colorado & Southern will require 13,600 tons of rails, 34,000 rail joints, 652,000 tie plates, 6,000 kegs of spikes, 800 kegs of track bolts, 300 tons of cast iron pipe and 376 tons of bridge steel for building the double track line from Pueblo, Colo., to Walsenburg.

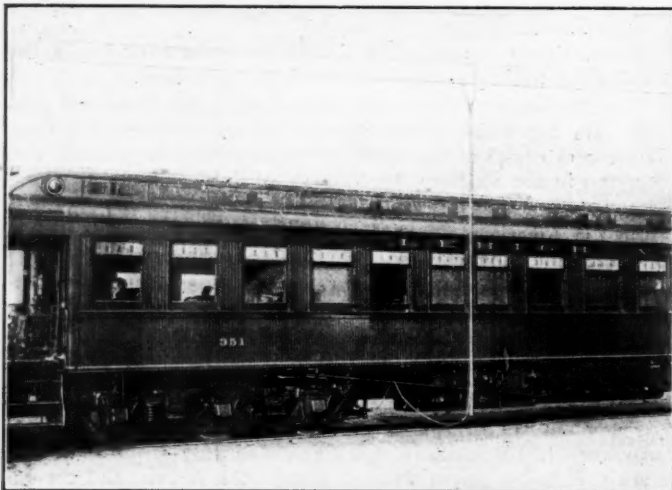
General Conditions in Steel.—The steel situation remains about the same as reported last week. Shipments are heavy and greatly exceed the amount of new orders received. The Republic Iron & Steel Company has reached an agreement with its men and its mills will be started up immediately. Five Canadian steel companies have united to form the Steel Company of Canada, with a capital of \$35,000,000.

Private Car Telephones.

Private cars on the Lehigh Valley have recently been equipped with portable telephones, through the medium of which connections may be secured with telephone train wires, or private telephone lines, at any point along the line. The connection is established by the use of line poles attached to the wires above.

It is thought that the Lehigh Valley is the first road to equip its private cars in this way. At present, two cars, those of the vice-president and of the general manager, have been equipped with telephones. In the former car there are three telephone stations, one in the rear observation room, one in the vice-president's stateroom and one at the stenographer's desk. The general manager's car is equipped with but two phones.

Recent transmission tests of this service, made between the cars



Lehigh Valley Private Car with Telephone Equipment.

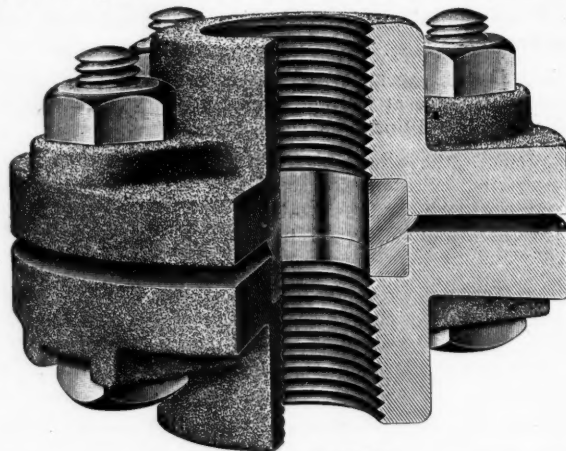
stationed at Sayre, Pa., and the railway offices in New York, are said to have proved satisfactory. The accompanying illustration shows car 351 with the line pole attached to the wires above. Beneath the car, in a watertight box, a flush type receptacle and a standard telephone sub-station protector are mounted. The line pole used to establish connections with telephone line along the right of way has one end of its connecting cord fitted with a plug which registers with the receptacle. At some stations, jack boxes, mounted on poles, are provided and the connections are made by a cord fitted with two plugs.

A special 16-cycle battery-operated interrupter is used for signaling. The battery is supplied from 20 dry cells carried in a holder beneath the car. This telephone equipment, furnished by the Western Electric Company, New York, was made of special design and finish to conform with the luxurious appointments of the private cars.

Dart Unions and Flanges.

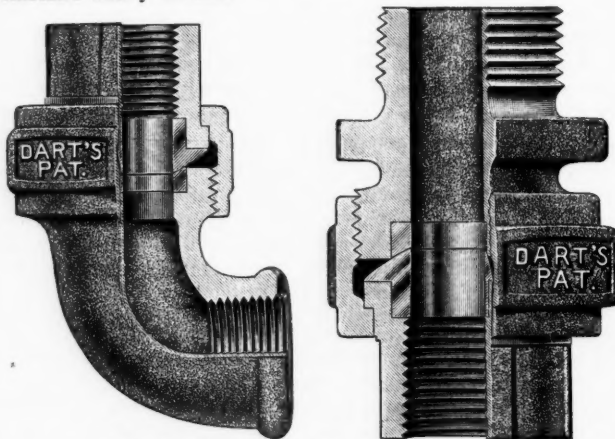
In the illustrations are shown a pipe flange, an air pump union, and a pipe elbow, made by the E. M. Dart Manufacturing Co., Providence, R. I., all of which have the Dart bronze seats.

This style of joint, used in connection with piping joints of various descriptions, has two seats of bronze, so made to prevent



Dart Flange Union.

corrosion. The iron portions of these flanges and unions are made of malleable iron, of heavy pattern. The shoulders in the nut and on the swivel end are very substantially built to withstand heavy strains.



Dart Elbow and Air Pump Union.

The Dart flange union, shown herewith, is adapted for high or low pressure service, and tight joints may be obtained, regardless of the unions being in or out of alinement.

Improved Castor or Portable Turntable.

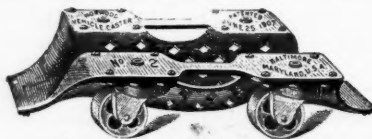
The accompanying cut shows the Norwood vehicle castor, or portable turntable, for handling automobiles during loading or unloading at railway depots. It is said that lifting an automobile

in order to get it out of the car, and afterward lifting and dragging it around the platform, not only strains and bends the fenders, lamp forks, etc., but often snags the tires by dragging them over

nails, splinters, etc., causing damages and considerable loss to the railway company. With this device, fewer men are required for handling automobiles, and the device may also be used in handling large crates, etc.

The body portion of the Norwood castor is made of malleable iron, having four large ball-bearing castor rollers on the corners, forming a small truck. The castor is built to conform to the shape of the wheel, and the ends of it droop within 1/2 in. of the floor, so that the wheel of the automobile will easily roll into it.

This castor should be very useful at railway depots as well as in shops and storerooms. It is manufactured by the Automobile & Accessories Mfg. Co., Baltimore, Md.



Norwood Vehicle Castor.